The Socio-Cognitive Architecture of the Discourse of Meaning Making as part of the CLIL Learning Experience:

A Case Study at Primary Level with Limited English Students in a Romanian Context

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Submitted by Irina Adriana Hawker, to the University of Nottingham as a thesis for the degree of Doctor of Philosophy in Content and Language Integrated Learning (CLIL), 28th March 2013

I certify that all material in this thesis which is not my own work has been identified, and that no material from here has previously been submitted and approved for the award of a degree by this or any other University.

(Signature)

Irina Adriana Hawker

ABSTRACT

This study *focuses* on limited English students' cognitive engagement generated through learning interactions with others and tasks under a content-driven and discovery-oriented CLIL learning arrangement in a primary school setting. The main aims are: to explore students' capability to access and inhabit learning spaces within the L2 mediated discourse; to investigate the potential the CLIL learning experience has to sustain dialogic learning and thinking of a higher order; and finally, to make a contribution to the debate over the potential of the CLIL learning experience to promote deep learning and foster life-long learning competencies.

At the heart of its *theoretical underpinning* lies the idea that cognition develops through the merging of the social with the individual which points towards the need to corroborate *a socio-cognitive theoretical framework.* Thus, the investigation is conceptualised within the 'inter-mental development zone' (Mercer and Littleton, 2007), under the auspices of dialogic learning (Wells, 2001b), and in cognisance of the individual's active construction of knowledge (Bruner, 1985; van Dijk's, 2006a). This theoretical line originates in the, now, classic theoretical constructs of Zone of Proximal Development and the More Knowledgeable Other from Vygotsky (1978), and the notion of scaffolding from Wood, Bruner and Ross (1976). With regard to the methodological design, this explorative study falls under the qualitative paradigm within the boundaries of a case study, and corroborates close observations of the learning behaviours with introspective methods. A multilayered analysis is employed which allows elements from various contextual layers and dimensions to enrich the analytical insight. In addition, a fine grained-analysis is pursued regarding the dynamics as well as the substance of the learning events, which conveys a systematic and holistic investigation of the learning phenomenon.

The findings of this study suggest that the CLIL approach be regarded as a *learning interaction of three foci* whereby alongside content-grounded and language-oriented strands run equally well-represented management-of-the-learning strands. Further, it is proposed that a reasonable level of ambiguity stemming from presenting content in the medium of a foreign language and from exposing students to new intriguing facts, prompts cognitive conflict thus giving rise to *explorative conversational digressions* which bring added cognitive value to the peer-sustained learning interaction. Moreover, this investigation also highlights the *complementarity between conversational and instructional units* on three levels of cognitive engagement (propositional, linguistic and managerial). Finally, an *ability to activate and manipulate different manifestations of knowledge* is documented. If this ability would be nurtured long-term, then a disposition for inquiry and criticality as well as an enhanced metacognitive awareness can develop which may translate into skills transferable across the curriculum. Overall, the study recommends the CLIL approach as a rich cognitive medium for learning, and an asset for promoting quality learning with the specification that its implementation needs careful context-bound consideration.

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To my family, Bianca, David, Livia, Linda and Hugh

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I: INTRODUCTION

Given the tendency of some PhD projects to tighten up their research questions around nearly atomic entities, an overall evaluation of an L2 mediated learning experience may seem like an overambitious scientific endeavour. Nevertheless, rather than fragment it into over–abstracted segments, my intention remains to pursue an exploration of the learning phenomenon as a whole unit, i.e. in my project, the learning experience comprises both the learning discourse generated in the interaction with the tasks and content at hand, and the learning discourse generated in the interactions with others.

Thus, at the risk of oversimplification, it can be said that this project aims to explore how young limited English students come to make sense of the L2 mediated content to which they are exposed as part of their CLIL History lessons. In other words, my research questions lead to an exploration of students' capability to access L2 mediated learning spaces. More precisely, it identifies what types of knowledge students choose to activate and how students set into motion these different units of knowledge while working on understanding.

The Introduction comprises three main sections which address the following: a rationalisation of the study in both the broader field of CLIL theory and practice, and the Romanian education system; a clarification of the aims of the current study; and finally, an overview of the Romanian historic background, with explanations of more current educational trends in the primary sector and L2 pedagogy.

From the outset, I would like to be explicit about the fact that in developing this project I have drawn on a wide range of interconnecting bodies of literature, some of which are: emergent theoretical proposals in CLIL, theories of learning of Vygotskian and Piagetian descent, L2 learning and acquisition, and discourse studies. These are going to be reviewed in the relevant chapters/sections, with the provision that there are limits as to the amount of literature that can be covered in a doctoral project.

I.1 RATIONALE: A GLOLOCALISATION OF THE RESEARCH FOCUS

The rationale for the study is rooted in a broader educational debate in which various cognitive and communicative gains are professed on behalf of this learning/teaching approach. In addition, due to the recent economic, political and educational European integration, the interest for this project stems from a current need to look at the applicability and value of such a learning approach for the Romanian context. Thus, rationalising the study becomes a question of considering both the more global and the local implications.

As argued elsewhere, the professed support for the CLIL approach across Europe on grounds of its potential to support cognitively enhanced learning, has gained increased investigative attention recently (Hawker, 2013).

The CLIL European scholastic community is beginning to closely scrutinise the relationship between the notions of cognitive engagement and learning through a language other than the students' first language. Such a research orientation has been particularly prompted by suggested associations of the CLIL approach with student-centeredness and higher order thinking activity (Coyle, 2007a, 2007b; Ting *et al*. 2007; Ting 2011).

Over the past decade, an increasing body of literature has provided fairly strong support, both theoretically and empirically, for the idea that learning under the CLIL approach is a cognitively enriched experience which has the potential to sustain thinking of a higher order and boost metacognitive awareness (Jäppinen, 2005; Stohler, 2006; Zydatiß 2007; Vollmer, 2008; Lorenzo, *et al*. 2009; Coyle *et al*. 2010; Ting 2011). For instance, from a neuroscientific perspective, Ting (2010a&b) argues that CLIL learning involves interactive knowledge construction processes which are coherent with how the brain learns. In the same vein, Van de Craen *et al*. (2007a) and Coonan (2007a) appear to concur that the nature of integrative learning programmes is demanding and thus cognitively stimulating. According to them, any 'extra cognitive burden' which may be posed by the dual focused processing can become the very prompter of cognitive acceleration. More specifically, having to attend to conceptual understanding more persistently can trigger deeper semantic processing and thus stimulate higher order thinking activity (Vollmer *et al*. 2006 *cited in* Dalton-Puffer 2008).

Furthermore, Coonan (2007b) emphasizes that the accommodating capacity of CLIL learning for task-based activities allows for the identification of complex cognitive processes to be brought into play: knowledge/information gathering; comprehension confirming; application/making use of knowledge; analysing/taking part; synthesis/putting together; and evaluation/juggling.

From the point of view of neuropsychology, the explanation for the advantage of dual focused learning stands in the fact that it appears to enhance neural activity (Fabbro, 1999; Edelman & Tononi, 2000). Research on brain activity has shown that the bilingual brain needs less effort that is less work load to perform certain tasks under scanning conditions (Blakemore & Frith, 2005; Bialystok *et al.*, 2005; Mondt, 2007). CLIL may not create this brain plasticity but it is believed to fully exploit it.

Some researchers note a tendency in classroom practice to plan in the zone of learners' *actual* development (Vygotsky, 1978) when L2 is limited (Kaufman and Crandall, 2005). However, it has been suggested that simplification of the content and minimalisation of the cognitive tasks is not the answer even when one deals with students with limited L2 proficiency. In other words, it is possible to promote higher levels of thinking whilst reducing linguistic demands. Some studies provide an indication that subject matter knowledge is same or even better in CLIL classes especially with primary school children (Van de Craen *et al*., 2007a&b; Stohler, 2006). In short, both teachers and students need enrichment and elaboration of the knowledge rather than simplification (Dong, 2002; Eschevarria *et al*., 2008). To put it briefly, one of the main strengths of CLIL pedagogy could rest in its advocacy for cognitively demanding classes as a forum for genuine and meaningful learning.

There are however concerns too, regarding, for example, student engagement and subject competence, given the varying levels of proficiency in the target language (for a detailed account see Dalton-Puffer 2011: 187). Increasingly, the idea of an enhanced cognitive ground under the CLIL approach appears to be placed under critical scrutiny as well as, in some instances, the employed research design, and therefore, the validity of some of the empirically demonstrated benefits (Bruton, 2011a).

Such findings show an underlying preoccupation with determining the academic value and the local relevance of the CLIL approach. This is usually achieved by treating language and content as two somewhat independent halves. Maintaining this line of inquiry could prove a futile effort as it would be

difficult to identify clear cut boundaries between semantic and propositional processing. It may be useful instead to start departing from a dualistic conceptualisation of curricular content and linguistic expression and regard them as one process (Dalton-Puffer, 2011).

An emphasis on the unity between content and language can bring to the fore explorations of the very essence of this type of learning. Heine (2010) undertakes an investigation of those cognitive processes consciously set into play during simultaneous work on accessing propositional knowledge and linguistic decoding, thus initiating a much needed research direction in CLIL. In-depth explorative investigations centred on how students access an L2 mediated learning space can lead to a more in-depth understanding of the very essence of this type of learning. In this way, the research direction is taken a step closer to what is truly relevant for CLIL.

However, this is not to minimise the significance of other factors, nor does this argue for a pursuit of CLIL 'pure' data. One of the criticisms brought to research reporting successful outcomes of the CLIL approach is that they tend to overlook the importance of distinguishing other non-CLIL factors which may contribute to the positive outcomes (Bruton, 2011b). In reality, many CLIL teaching-learning arrangements subsume elements of task-based learning, problem solving or communicative teaching. In addition to this, numerous other factors come into play; motivation, parental support, school ethos, personality traits only to name a few. Perhaps, if one distances themselves from the desire to measure the effects of separate variables, or to manipulate control groups, one may come to the realisation that what comes into the foreground is the learning phenomenon itself. In other words, a naturalistic and holistic approach provides the necessary frame for a close encounter with the learning event while also accounting for some of the other factors which remain in the background.

In spite of the positive empirical support that the CLIL approach enjoys of late, a concern is still echoed in some European contexts regarding the feasibility and relevance of its implementation (see those contexts where CLIL programmes are made available to students only after reaching a certain level of English language proficiency via the EFL classes - Fruhauf *et al.*, 1996). Such reserves boil down to questions such as: *Does limited English proficiency necessarily place us in the 'less language –less complex cognitive activity' quadrant of the CLIL matrix* (Coyle, 2007a)? In other words, *Does a low level of language comprehension necessarily restrict our students from genuine*

cognitive engagement with the content?; or, *Is there an intense complex mental activity set into motion to compensate the language barrier, which enables students to operate at a higher cognitive and metacognitive level* ?. I would argue that a great deal can be learnt about this cognitive activity by looking at the strategies and the different manifestations of knowledge that students employ. It is this particular debate within the CLIL field to which this piece of research aims to make its contribution.

With regards to the Romanian context, concerns as to how realistic it actually is to teach subject matter through the means of English to students with limited proficiency in L2, have not explicitly been voiced in the Romanian educational landscape. Since mid 1990s, bilingual programmes have been run only at upper-secondary level to students that are considered to have achieved a reasonable level of proficiency in L2. The fact that CLIL does not seem to have been given consideration as an official option in primary education can indicate at least two reasons why the educational authorities appear to still be in doubt about it. Firstly, the educational authorities may consider that there is not enough specialised staff to support the implementation the CLIL approach. Secondly, CLIL may be held back at primary level because of the mentality that the children would not be able to cope with the content especially if the L2 proficiency is limited. In this respect, the study aims to provide the Romanian context with a deeper understanding of how the bilingual type of education works for young learners.

In brief, students' cognitive performance as a result of their classroom learning should be a priority in any educational setting, and also of high interest for educational research. Provided that empirical evidence from a network of studies can establish CLIL as an approach that truly enhances innovative learning then, it follows that research findings on how exactly children learn under this approach can become of interest to the wider field of learning theories. In addition to making a contribution to the body of research and literature in CLIL and CLIL related fields, studies such as this can also impact on CLIL practice by suggesting context-relevant recommendations.

I.2 PURPOSE OF THE STUDY: RESEARCH QUESTIONS AND AIMS

This study focuses on *students' learning activity* while *accessing and inhabiting learning spaces* within the *L2 mediated discourse*. More specifically it explores *meaning making in terms of discourse processing*, i.e. children processing *the discourse of the learning task* and *the discourse of their interaction.*

Being an explorative study, the research focus has become tighter as the investigation progressed. Two main aspects have remained in focus however from the onset: students' ability to access and perform within L2 mediated learning spaces, and the potential that the CLIL learning experience holds to nurture learning of a higher order. The progression of the research questions in terms of subsequent focusing can be seen in the Methodology chapter (IV.1). The purpose of this study can be summarised as follows:

a. To explore students' capability to access and inhabit learning spaces within the L2 mediated discourse

- To identify the processing activity on discourse levels of depth
- To appreciate the shape of *the fluid interface between the intra- and inter- psychological planes* in the process of meaning making
- To map the types of *Knowledge* underpinning the students' *processing activity*

b. To investigate the potential the CLIL learning experience has to sustain dialogic learning and thinking of a higher order

- To look at the nature of the discourse generated in the course of learning in terms of both *dynamics* (patterns) and *substance* (tracking intellectual activity)
- To tailor a multilayered microanalysis around *conversational and instructional learning units,* discuss how they complement each other and critically evaluate their potential to support deep learning

These more theoretical purpose statements outlined here are revisited in the Methodology and Analysis chapters under the sub-sections IV.1.3 and VI.1.5, respectively. In these sub-sections the progression of the research questions is followed, and aims of a more empirical nature are mapped onto the actual analysis of the data.

I.3 THE WIDER CONTEXTUAL LAYERS OF THE THESIS: THE MACROLEVEL

The main layers of context identified in this study largely follow Urie Bronfenbrenner's model of the ecology of cognitive development. He recognises that cognitive growth occurs as a systemic interaction between the human organism and the environment and proposes the following interlinking contextual layers: macrosystem (e.g. community, the larger social environment and culture), mesosystems (e.g. family, school ethos, and religion), microsystem (e.g. cognitive sets and learning arrangements) (Bronfenbrenner, 1993, 2005). This introductory chapter of the thesis looks only at the macro-level; the other two layers of context (meso- and micro-strata) are going to be explained in detail in the Context chapter.

For a better understanding of the meso- and micro- layers of context, a brief description the overall socio-politic and educational Romanian landscape is needed in order to see how this has shaped people's national identity and current mentalities. This more general presentation is going to be brought closer to the specific focus of this project by looking at the educational reform following the events in 1989, with particular interest in foreign language education and the primary sector.

I.3.1 Brief general background and historical overview

Situated in the South-Eastern part of Europe, Romania is now a parliamentary republic. It has a land surface of approximately 237,499 sq. Km and a population of approximately 21.5 million (NIS, 2007). Romania joined NATO in 2004, and became one of the latest additions to the European Union in January 2007.

According to the latest available National Census from 2002, Romanians constitute 89.5% of the population with a Hungarian community (including Szecklers) of approximately 6.6% followed by relatively small percentages of other ethnic groups such as Roma (Gypsy) - 2.5%; German - 0.3%; Ukrainian - 0.3%; Russian - 0.2%; Turkish - 0.2%, and other ethnic groups including Serbians, Czechs and Croatians - 0.4%. Denominational faith is represented as follows: Eastern Orthodox - 86.7%; Roman-Catholic - 4.7%; Protestant - 3.2%; Greek-Catholic - 0.9%; Unitarian - 0.3%; Evangelical - 0.1%; and

other religions including Muslim - 0.4% (NIS, 1999-2004). The official language of instruction is Romanian. Nonetheless, for all levels, and depending on the ethnic representation in particular areas, schooling is also provided in the relevant minority language.

In 2005, the allocated budget for education in Romania was relatively low, 3.5% GDP, by contrast with an European average of 5.0%, 7.0% in Sweden, 5.5% in Hungary and 4.5% in Bulgaria (European Commission, 2009: 121). At present, the literacy rate is recorded at 97.6% (UNDP, 2010) with the following school enrolment rates for 2009-2010 by educational level/age.

- 78,4% Pre-School Education/ 3 to 6(7);
- 97,6% Primary Education/ 6(7) to 10(11);
- 98.9% Lower Secondary Education/ 10(11) to 14(15);
- 96,4% Upper Secondary (Theoretical, Industrial, Economic and Administrative, Informatics, Pedagogical, Health, Arts, Sports, Military, Agricultural, Veterinary and Theological)/ 14(15) to 16(17);
- 6,1% Vocational Education 14(15) to 16(17);
- 96,7%* (*esp. representative for urban areas) A Levels/ 16(17) to 18(19);
- 45% Tertiary Education 18(19) onwards but current trends show an upper age recorded at around 32 (Mejer *et al*., 2011); and
- 1,6% Adult Lifelong Education/ 25 – 65.
  (MECTS, 2010)

A full understanding of the Romanians' sense of national identity requires an exhaustive exploration of events from various historic stages which would go well beyond the communist years. Due to the limited scope of this sub-section, only a couple of points shall be made about those mentalities which seem to underlie the nation's tendency to oscillate between patriarchal stability and progressive change, and between a monochrome view of society and a multicultural vision of it.

Over the last decade, Romania seems to have made progress in moving towards a multicultural, more inclusive and diverse society. This is due to a series of socio-economic factors which increased the nation's exposure to diversity. Some of these factors are as follows.

- Extensive civic and human rights education,
- The return of some prominent figures from the intellectual segment of the Romanian Diaspora,
- The experience of living, working and studying abroad of thousands of ordinary Romanians,
- An increasing intake of international students at tertiary level,
- Student exchange programmes, and, finally,
- Small businesses which employ work force from abroad.

However, even a brief analysis of Romania's historical events and its relatively recent communist past can reveal that the road towards pluralism and multiculturalism has not been without its controversies.

At the core of the making of the Romanian nation, stands the argument of linguistic unity, common origins and continuity, i.e. Daco-Romanism. A moderate nationalist perspective on the matter would highlight the fact that Romanians are descendants of the Daco-Roman population forged in the years that followed the Roman conquest of Dacia (106AD). Mostly based on archaeological evidence and the Latin linguistic heritage, this viewpoint strongly supports the continuity of the romanicised Getae within the same geographical parameters as modern day Romania (Petre *et al*., 2007).

The continuity and linguistic unity theory has fierce support from the more radical Romanian nationalist wing, and fairly strong support amongst Romanians in general. The counter thesis, known as the Rosenthalian theory, proposes that the long and harsh war between the Getae and the Romans left a seriously declining population in this area, and that later, at the withdrawal of the Roman legions, most of the population migrated south of the Danube. Therefore, the disputed Transylvanian area would have been barren at the arrival of the Hungarians and therefore, by the right of the first settled Transylvania was later claimed by the Austro-Hungarian Empire.

Accounts of early modern history (1600-1800) depict Romania as a country often trapped between considerably larger and more powerful neighbours, namely the Hapsburg, the Ottoman and the Russian Empires. Within this political frame, the accounts of this nation's attempts to attain independence from the control of these affluent neighbours can be regarded as a mix of romanticised heroism and practical political allegiances.

The first brief unification of the Romanian principalities of Moldova, Wallachia and Transylvania was accomplished in 1600 under Mihai Viteazul (Michael the Brave) for the first time since the sate of Dacia. Much later, the Romanian modern state is created through the union of the principalities of Moldavia and Wallachia in the year 1859, with the simultaneous election in both principalities of the ruler Alexandru Ioan Cuza. In 1878 Romania is granted its independence in the Treaty of Berlin which brought closure to the Russo-Turkish War. Due to the gradual disintegration of the Russian and the Austro-Hungarian powers, the control over the provinces of Bessarabia, Bucovina, and Transylvania decreases. In 1918, these provinces opt for unification with the principalities of Moldova and Wallachia, thus becoming what was then proclaimed as Greater Romania (Tobin, 2010).

The achievement of Greater Romania elevated national pride but with the territorial regaining came also a significant growth in the ethnic and denominational minorities. While the argument of the Carpathian-Danubian - Pontic continuity and of the Romanian speaking majority population may have won, an equally important argument profiles, that of tolerance and acceptance towards diversity. For instance, the principalities of Wallachia and Moldova (Romania before 1914) had a fairly homogenous population with a Romanian majority and only a few minorities (8% altogether) of which the most predominant were the Jews. This state of affairs was challenged by the unification in 1918 when the ethnic distribution looked as follows: 71.9% (Romanians), 7.9% Hungarians, 4.1% Germans, 4% Jews, 3, 3% Ukrainians. Thus, according to the national census from 1930, approximately a quarter of the population in post-1918 Romania were of an ethnic origin other than Romanian. In addition, besides the still dominant orthodox faith other new denominations become better represented amongst which are: Romano-Catholicism, Greco-Catholicism, Lutheranism and Calvinism (Petre *et al*., 2007).

Such a gain of ethnic and religious diversity could have been a great opportunity in building a multicultural and tolerant social environment over the time. However, the years to come had a different reality in store. Back in the 1950's when France and Germany were setting up the European Economic Community (1957) which 35 years later turned into the European Union, Romania followed a completely different historic trajectory.

The end of World War II left Romania stripped of Bessarabia (the current Republic of Moldova) and under the direct control of the Soviet Union until the late 1950s. The Soviet influence facilitated the rise to power of the Communist Party which was led by the worldwide known dictator, Nicolae Ceausescu, for over 30 years (1965 - 1989). Although the Soviet Union seemed to have loosened the grip over Romania by giving Ceausescu free rein and by seemingly tolerating his connections with the West, in actual fact, Romania remained a strategic satellite country for the USSR (Tobin, 2010; Djuvara, 2010).

The communism practised in Romania, particularly in the 1980s, was a hard core communism similar to Asian and Stalinist original communism (Birzea, 1995; Fretwell and Wheeler, 2000). This dogma could not allow ethnic diversity to grow and flourish and therefore under pretences of integration, the Communist Party tacitly pursues a ruthless policy of ethnic purification of the nation. Thus, between 1945 and 1951 approximately 150,000 Jews left Romania; between 1970 and 1980, every year, nearly 14,000 Germans fled to the Federal Republic of Germany; thousands of Romanian citizens of Hungarian ancestry risked the illegal crossing of the border; and the whole gypsy community was often at risk of marginalisation (Petre *et al*., 2007). If one considers the fact that the Romanian territory has hosted for centuries a staggering white-Orthodox-Romanian majority, it becomes obvious why it would have been so important to have had a political climate that would have ensured genuine recognition of these ethnic minorities. Equally, this would have shaped a nation that could have developed a capacity to accommodate both national feelings and a love for cultural diversity.

The absurd impositions of the communist regime resulted in a silent widening of the gap between people who had been constantly pushed to the limits, and system which tightened its rigidity in all respects. Despite Ceauşescu's careful protections, this accumulation of tension resulted in a full blown revolution which spread nationally overnight in December 1989.

Some commentators note that unsurprisingly the post-1989 transition period is characterised by tendencies to remain suspended in political limbo and confusion. This can be attributed primarily to the consequences of those 40 years of avid communist indoctrination (Kozma, 1989/1990; Andrei, 2006). It can also be due, in part, to a perception of Romania as a peripheral nation, i.e. a perceived image of Romania as a powerless political marionette, often

trapped between those more powerful states, and now acting as a second class citizen in the European Union and as a military base for the American government. Finally, people's deepening socio-politic apathy comes also as a result of the disillusionment in the ethics and political potential of the leaders from after 1989.

For instance, a poll undertaken by the Open Society Foundation (OSF), in 2004, shows small percentages reflecting the level of trust Romanians hold in the national institutions. This, for a nation who is in the process of rebuilding a democratic society, is somewhat worrying since these institutions are supposed to be the very structures of exercising democratic change. According to this opinion poll (OSF, 2004), 'High' and 'Fairly High' levels of trust shown to the Government and the Parliament come in the range of 20%-30%, with the political parties scoring only 7%. Such relatively low percentages appear to be a clear indication of the disengagement of the masses with these structures whilst there appears to be an almost unchallenged vote of trust (85%) for the Orthodox Church. Whilst spiritual life, predominantly Christian faith, is one of the major elements which laid the foundations of our sense of national identity, overreliance on the institution of faith and the Orthodox dogma may pose some difficulty in terms of the advancement of free thinking. Although trust in the national Orthodox Church appears to be the highest, there seems to be a gradual increase in the trust people place in international fora such as EU (46%) which can be a positive factor in the way of making steps towards a genuine opening up to democratic values.

This section has highlighted that although of late Romania is decidedly engaged in a process of genuine democratisation, this did not come without difficulties due to certain mentalities, political events, and socio-ethnic issues intertwined in its historical past. The relatively nationalist mentality and the people's oscillation between stability and change reflect to a great extent on what is locally understood as good quality education. There still is a tendency for educators to hold on to those more traditional ways of knowing and to take pride in encouraging competitive schooling environments and elitism.

I.3.2 Educational reform: aiming for a transformed educational vision

If the communist dogma managed to graft a feeling of equality and security onto people's consciousness, the dramatic economic and social changes which followed the 1989 events have awoken the Romanians to an altogether different kind of reality. This sudden change of regime was followed by a series of economic, political and educational reforms. While they are all interrelated and equally important, the educational reform has been the most difficult and slow because it challenges existing mentalities, values and attitudes.

In a fairly picturesque account of the communist years, Parham-Brown (1998) reports on his debates back at the beginning of the 1990s with his Romanian university students on a highly sensitive subject, namely that of the animosity Romanians manifest towards the gipsy population. What he finds striking is an incapacity to assess critically and accept multiple viewpoints on the part of such young people. This inability to look inwards and expose one's own weaknesses without fear of losing face has been, perhaps, one of the principal culprits for the hindrance of the development of a genuine democratic mentality in Romania.

Birzea (1995) acknowledges the fact that an educational reform is not just about replacing old structures in the system but more so about aiming to transform retrograde ways of thinking. He estimates a time span of a generation, i.e. 25 years, for a democratic type of educational reform to attain most of its objectives; and identifies several stages in the educational reform undergone during the first part of the transition years (1998-1995): deconstruction, stabilisation, restructuring, and counter-reform.

The first stage is a spontaneous anticommunist movement, one of ideological breakaway, an utter denial of any values held high during the communist years irrespective of whether these had anything to do with the communist doctrine. The second stage of transition is characterised by an overall growing interest in the economic and political power, and a decline of interest in education. However, this stage is considered a stage of consolidation because it defines a new legislative framework with some positive initiatives such as freedom for religious education in schools, minority languages acknowledged nationally as language of instruction in the relevant areas, a reinstatement of private education and an acceptance of alternative systems of education such

as Montessori and Waldorf. The third stage is characterised by changes triggered by the influence of the World Bank and the International Monetary Fund, and by work towards meeting the criteria in order to join the European Union. Some of the educational initiatives are as follows: decentralisation of educational administration, modernisation and diversification of the system of financing education, reorganising the teacher training system, changes across all curricula, and liberalisation of the educational publishing market. The fourth stage that of a counter-reform shows that deep set mentalities and instilled socialist practices are not easily challenged. '*Residual communism is still active*' (Birzea, 1995:8) as the post-modern Romania sees a revival, to some extent, of a disguised communism. This is largely due to the reinstatement of certain leaders (formerly part of Ceausescu's oppressive apparatus) who re-emerged as 'nation's savers' (*ibidem*: 9). These leaders have fuelled a movement which Birzea deems to be overall nationalistic in that it preaches a need for stability, elevates national pride, encourages suspicion of foreign influences, and undermines educational research.

The latter part of the transition years (2000 onwards) has made some significant steps towards a more global and democratic vision of education. There has been continued support for the educational reform from the World Bank and an increasing number of small-scale EU-funded projects encouraging educational partnership and mobility. Such a strong trend driven by the EU has resulted in attempts for an implementation of some western models, however, still with mixed results (Andrei, 2006; Ulrich, 2008).

One of the stumbling blocks to the educational reform process remains the controversy around the administrative and intellectual decentralisation of the education sector. Although by 2005, many Local Educational Authorities (School Inspectorates) were given administrative autonomy (Popescu, 2010) the process of decentralising the education system still has met with some scepticism (Reisz, 2006). It has become increasingly evident that schools would benefit from moving towards a system of democratically-elected boards as opposed to the ambiguous nominations made by the School Inspectorates whereby headteachers are appointed on grounds of their political affiliation to the governing party. In addition, schools need to make major steps towards administrating their own finances, projects and human resources. While an enthusiastic take on the western democratic model would fully advocate such changes, a more sceptical take on the matter would point out that such

decentralisation would allow far too great authority to individual schools and boards. Chapman (2002), Carausan (2004) and Johnson (2007) seem to be in agreement that the decentralisation of education in a country sill governed by compromise may run the risk of merely changing the locus of corruption.

Another measure proposed under the umbrella of decentralisation is curricular autonomy through which schools are free to establish priority areas in close relation to student and parent perceived needs. Again, although generally this is regarded as having great potential for the development of the individuality of each school, it is, however, also seen as an extra burden, to some extent, particularly in the context of the underpaid teachers who have become increasingly reluctant to take on any extra work (OECD, 2000).

Furthermore, the introduction of the alternative textbooks has also divided opinions. On one hand, teachers are becoming increasingly comfortable with the idea of the multiple and fluctuating truths (Hargreaves, 1994) and, therefore, the freedom of exploring alternative accounts. Moreover, they are happy to encourage students to look critically at the different types of textbooks thus initiating their students into challenging the authority of the written word. Nonetheless, the same teachers criticise the superficiality and lack of structure of many of the new textbooks, and raise questions as to any vetted interests that the Ministry of Education may have towards certain publishing houses in the process of textbook quality validation.

The above examples from the education sector reiterate a theme from the previous section, namely the mixture of tradition and modernity (Andrei, 2006; Ulrich, 2008). Educators also assume ambivalent feelings towards change: on the one hand, they can fully see the value of a democratic type of education; however, they tend to still remain trapped in a safety net of mundane teaching rites. Simply put, educators seem to be torn between ideology (what they feel they should do and hold as healthy educational practice), and practicalities (what they actually do under the pressures of being financially solvable) (Veleanu, 2006).

Administrative reform of any education system however may not occur at the same pace with shifts in mentalities about educational values. The conceptualisation of quality learning dwells on a lingering rationalist bias which still pervades many educational establishments and resides almost

unchallenged in the mentality of the general public in pseudo post-modern Romania (Ulrich, 2008). Hager (2005) unpicks a series of basic assumptions underlying an influential and universal story about what constitutes good learning. Some of these assumptions can also be detected in the Romanian educational landscape and are entertained by a nostalgic view of quality learning; a view which remains in awe of those universally established truths and the unquestionable authority of the knowledge passed down by classic scholars (McGrath, 1997). In addition to this, learning progression throughout schooling years follows the Piagetian model of stages in cognitive development quite religiously.

In Romanian terms, this kind of learning is often described as 'invatare temeinica' which regards the storage of transmitted propositional information into long term memory. According to this principle one desirable educational outcome is to endow students with respectable general knowledge; in Constantinescu's words to turn students into 'living libraries' = 'biblioteca vie' (2012:1). Such perception of good learning, i.e. 'the furnishing of minds with true propositions', is critiqued by Hager who notes that this conceptualisation of learning rests on several related assumptions: learning is at its core an essentially individual activity; learning by reasoning and an objective pursuit of knowledge stands on higher ground by comparison to the more intuitive forms of knowing; the best learning is verbally mediated and is represented by knowledge that is written down or spoken; and, finally, learning centres on the stable and enduring (Hager, 2005:649-650).

Most of the above assumptions spring from a narrow rationalism, grounded in a bipolar ontology which sets up problematic dualisms that tend to favour for example, the more rational forms of learning (e.g. logical deduction) with its associated scientifically-based knowledge (e.g. physics laws) over the building of interpersonal skills for instance (such as empathising), or to prioritise the acquisition of theoretical abstracted concepts over learning as training (Hager, 2005). Such dichotomies still characterise schooling to a large extent in Romania, with many class practitioners, seemingly unaware, operating more at the rationalist end of the continuum.

Progressive educational thought needs to attempt to avoid one-sided conceptualisations of learning and to remain reluctant to embrace exclusively either one or the other of the extremes of such dichotomies. Therefore, whilst these ubiquitous dichotomies still populate the current classroom practice and

pedagogical guidelines increasing recognition is need for a more holistic appreciation of the learning phenomenon. Even though not quite a general trend yet, of late, some Romanian educators and philosophers seem to agree that *'quality assurance is one of the most important parts in restructuring the national educational system'* (Bunda and Baciu, 2009: 71). This can be achieved both by reconceptualising and re-contextualising learning in the current socio-politic milieu. A transformed vision of education also needs to be informed by other international educational models as well as by exploring the changing national values and beliefs. In summary, a post-modern type of educational reform should commit to developing curricula and practice models that harmonise local and global elements (Walsh, *et al*., 2005; Djuvara, 2010; Enache, 2011).

I.3.3 Trends in the study of EFL and History in Primary Education

This last part is aimed at narrowing down the educational debate of change to aspects and facts regarding primary education, the teaching of History and English as a Foreign Language, and CLIL initiatives.

In 2009, primary education is recorded with an enrolment rate of 97.6% and a dropout rate of 1.4% (MECTS, 2010). It is compulsory and can be organized in public and private schools. There has been an upwards trend in pre-school enrolment from approximately 65% in 2000 to over 80 % in 2009 which is only benefited primary school in terms of children's school readiness (NIS, 2009; Mejer *et al*., 2011). In general, in the urban areas, a class comprises on average 20 to 25 pupils and the pupil-teacher ratio is of 19 to 1 (MECTS, 2010).

Romania's latest participations in the *Progress in International Reading Literacy Study* (PIRLS) are recorded in 2001 and 2006. PIRLS is conducted in by the International Association for the Evaluation of Educational Achievement (IEA) and aims to measure the performance levels of pupils in reading comprehension in the fourth year of primary education, more precisely students aged 9 or 10 (European Commission , 2009). The study undertaken in Romania comprised over 4000 students from 150 schools nationally, and showed the following levels of literacy. The average score established internationally (OECD) is of 500 points. In 2001, Romanian pupils had an overall national score of 512 points or 526 points if only the urban areas are

considered. In 2006, Romanian pupils scored an overall of 489 points or 515 points if only urban areas are considered (MECTS, 2010).

A class works primarily with one teacher (*invatator*) throughout the four years spent in elementary school. However, it has become increasingly popular for foreign languages, religion and, in some cases, music and physical education to be taught by other secondary level specialist teachers. The majority of the primary education teachers *(învăţători)* are trained in pedagogical high school (upper secondary education) which besides the general curriculum (followed by all the other theoretical schools) has a strong component of pedagogy, psychology and teaching methodology, with sustained teaching practicum. Secondary school teachers (*profesori*) are trained in long-term higher education, four to five years, depending on the subject they will teach (MECTS, 2005). 98, 5% of the primary teachers have qualified teacher status and a similarly high percentage is true of those secondary teachers who teach the specialist subjects.

Due to some nationalist inclinations fuelled by years of communist indoctrination, Romania has had some difficulty regarding the rewriting of the history books, particularly in the early days of the transition. Ciobanu explains that under the Soviet influence, history books '*expressed a myth of Romanian exceptionalism*' and presented history, especially to the young ones, as '*a series of successive glorious battles culminating in the victory of the Communist party and Ceauşescu's leadership'* (2008: 59). At the beginning of 1990s, when the first rewritten history books revealed open criticism of national heroes, and a questioning of national identity, this was taken as nearly an undermining of the very goal of education which, at the time, people still believed to be the promotion of '*patriotic loyalty'*. It became so controversial that one of the new textbooks had to be banned (*ibidem*). However, further efforts to re-narrate Romanian history have not been abandoned; one distinguished historian and philosopher who undertakes a critical exploration of Romanian history is Neagu Djuvara.

At present, History is taught one lesson per week throughout the 4th grade. Although it is only Romanian History that is being taught to primary pupils, the focus has moved away, to a large extent, from a purist and nationalistic take on events. The current approved textbooks attempt to contextualise Romania in the broader European historical landscape, and to encourage

alternative interpretations of the events presented. Thus, the study of history begins with an exploration of the notions of primary and secondary sources and how these can be used to understand historical events. In addition, there seems to be a strong emphasis on equipping students with a clear understanding of chronology in order to be able to navigate the content.

It may be safe to argue, that the present textbooks have limited the amount of information by comparison with the older textbooks, in order to make room for activities conducive to building up subject-matter-specific-skills. Thus, the introduction of skill-oriented activities resulted in a competition for space between content and skills in these course books. The main criticism raised to this refers to a de-contextualisation of certain historic events which would need a greater amount of detail for a genuinely in-depth understanding.

Another observation that could be made regarding the teaching of history at primary level is that this is limited to one linguistic medium of delivery, i.e. Romanian. The teaching of any national history through the home language is only natural; however, exploring historic events exclusively through one language is not that easily defendable especially in an age when increasingly history is regarded as an accumulation of alternative accounts. While I am not suggesting that the native language should be abandoned in the teaching Romanian history, I would argue that an inclusion of documents in different languages would ensure direct access to a broader range of perspectives. Moreover, in those areas where minority groups are well represented, national history should be delivered both through Romanian and the minority languages in order to enable nuanced and culturally accountable discussions of the historic events which shaped our nation.

In spite of Romania's long standing tradition of French before 1989, English quickly has won ground as a first choice in studying a foreign language over the transition years (Medgyes, 1997). This nearly spontaneous turn towards the Anglo-American culture and civilisation is largely explained by the international adoption of English as a *lingua franca*, but also by widespread resentment harboured throughout years of obligatory Russian (Kozma, 1989/1990; Constantinescu, *et al*., 2002). There has been increasing local interest in mastering the language that grants access to international commerce and current technological developments; an interest which has been readily and timely encouraged by EU policy. For example, from 1990 a

governmental decree made the teaching of a foreign language mandatory from the age of 8 in all Romanian state schools with a second foreign language to be introduced at the age of 10, showing that foreign language education held an important status. Then, the European Framework for Key Competences for Lifelong Learning recommended communication in foreign languages as one of the eight lifelong learning key-competences in an integrated Europe. This directive reverberated into the national curriculum and thus and in 2006, a new competence-based primary syllabus for English was released.

While foregrounding linguistic and communicative competencies is an improvement on the previous iteration of the syllabus (discrete-item approach), it appears to me that the current syllabi could be improved by introducing more cognitively stimulating content. At present, for instance, the Y3 syllabus appears to be dominated by the universal EFL topics such as *Family, Weather, Animals and Leisure*, which makes it safe to argue that there is scope for more content-driven and thought-provoking topics. Another noticeable weakness consists in the relatively vague indicators of expected progress (e.g. the phrase '*reluare și îmbogățire'* which translates '*revision and extension*' is stipulated in most places in a very much lookalike Y4 syllabus). Another example of lack of specificity in the syllabi is reflected in the vocabulary work section which seems to be resumed to recommending 150-200 vocabulary items for Y3 and 200-250 for Y4, respectively). Overall, it is only fair to acknowledge that English is clearly given more prominence in the national curriculum and more space in the students' timetables. However, in order for the English lesson to become quality classroom time, the syllabi need to be developed further. The receptive and productive aural/oral and written competencies stipulated here need to be contextualised in a more meaningful content so that our students become driven by an urge to communicate thoughts and ideas rather than by a pedagogic constraint to rehearse communication.

Bucur and Popa (2013) note that although methodological guidelines and details on the targeted competencies appear in the elective syllabi (Y1 and Y2), they are inexplicably discontinued in the compulsory syllabi (Y3 and Y4). Also based on interviews undertaken with stakeholders (students, parents and teachers) they advise that consistency and clarity in the recommended methodology across the four years of primary education is essential. In addition, they point out that the teaching of English at primary level should

not be restricted to specialist secondary teachers (holders of an academic qualification); primary class teachers with a vocational qualification in English should be encouraged to work with their students particularly on grounds of their greater understanding of how learning works at this age.

The popularity of English is reflected in the large number of students who opt for it as shown by the National Institute of Statistics. A growth of interest in studying English can be easily noticed if one looks at the steady increase over a decade as follows: 292.484 (1996-1997), 326.545 (1999-2000), 338.914 (2004-2005), 368.319 (2006-2007) (NIS, 2009). A brief look at choice across available foreign languages in mainstream education for 2007-2008 for instance, also reveals English as top choice in the study of modern languages in primary education.

LANGUAGES	The TOTAL NUMBER OF STUDENTS involved in the survey	
	517,694	7,678
	1st Language	2nd Language
English	353,121	2,987
French	150,486	3,630
German	125, 58	953
Spanish	951	-
Russian	355	32
Italian	223	94

Table 1: The distribution of the study of modern languages in primary education (NIS, 2009)

The enrolment rates in mainstream classes are not the only indicator of the sustained interest for the study of English. The results from the ESOL Cambridge examinations which many of the students in the urban area take are also indicative of high levels of motivation and committed parental support. For instance, for the December exam sessions in 2008 and 2009, the ESOL Cambridge examinations results for young learners look as follows.

	2008 Starters (A1)					*2009 Movers (A1)*				
PAPER	NUMBER OF SHIELDS									
	I	II	III	IV	V	I	II	III	IV	V
Reading & Writing	0.0%	3.5%	11.2%	33.5%	51.9	3.8	10.9	23.2	30.7	31.4
Listening	0.0%	4.0%	16.1%	29.3%	50.6	2.0	8.3	12.2	31.2	46.2
Speaking	0.0%	0.5%	4.2%	9.9%	85.4	0.0	1.2	4.5	12.7	81.6

Table 2: Grades Statistics for Young Learners Examinations - Movers and Starters (UCLES, 2011)

Behind the high percentages under shields IV and V lie hours of usually after-school preparation, and a significant level of financial and emotional family support. To this, there can be added a few successful initiatives with kindergarten students; more exactly, preparing children as young as 5 or 6 for *Starters* on grounds of their receptivity for foreign languages from a very young age (Butnaru, 2009). Nonetheless, such initiatives remain of a more exceptional nature for the Romanian context.

Mostly because of the appeal of tertiary education abroad, this interest in English is maintained throughout secondary school and college. For example, the ESOL Cambridge examinations grade statistics for 2010, in Romania, reveal the following percentages in total pass (with grades A, B and C): First Certificate English 79.6% (usually 13 to 15 year olds), Cambridge Advanced English 75.5% (usually 16 to 18 year olds) and Cambridge Proficiency English 81.4% (usually 17 year olds and over)(UCLES, 2011).

The clear upsurge of interest in the study of English has impacted positively on the number of European projects with a cross-curricular specific. One such example is the growing number of Content and Language Integrated Learning projects documented by the National Report on the Implementation of Education and Training 2010. If, at secondary level, L2 mediated learning (Geography, History, Literature and Human Rights through English) took off at the beginning of the 1990s as the result of a top-down implementation of European policy, somewhat by contrast, at primary level, there appears to be a merger of top-down European policy and bottom–up local initiatives. Such an integrated change model in which top down and bottom up would proceed simultaneously can be favourable ground for CLIL as a developing learning and teaching approach.

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The Macrolevel section from this Introductory chapter has been aimed at equipping the reader with a sufficiently comprehensive picture of the wider context. This last sub-section, *Trends in EFL* with application to primary education, has been aimed at reverting the reader's attention from the larger picture to a contextual layer directly relevant for the current study. More immediate layers of context (educational setting, participants and learning activity) are going to be introduced in the Context chapter (the meso- and micro- levels).

II: LITERATURE REVIEW

Such a holistic investigation of the CLIL learning phenomenon has pointed me towards the need to explore complementary and even contradictory theoretical concepts belonging to rival theories of learning, since settling for just one theoretical approach, however established, has proved to be insufficient. Therefore, my quest for theoretical support has taken me almost equally onto two apparently opposed theoretical paths: the cognitive-constructivist and the socio-cultural perspectives.

This chapter works towards an articulation of a socio-constructivist theoretical framework which reflects largely an exploration of established theoretical paradigms by networking a series of relevant theoretical constructs.

The first part of this chapter explores the broader picture of the internalist and externalist accounts of learning with a particular interest in the literature which debates the bridging of the two perspectives on learning. The second part follows the notions of agency and apprenticeship as they are projected through theoretical constructs such as zones of proximal development, scaffolding, psychological tools, peer-assisted learning, and dialogic learning. The third still considers learning as both a participatory and interpretive learning endeavour but this time from a discourse perspective.

Whilst, as far as the study is concerned, the overall aim of this chapter is to articulate a theoretical framework of adequate explanatory power, on a more personal level, I am on a quest for a metaphor for learning. For this purpose, I shall open this chapter with a *Prologue* in which I shall sketch a vision of learning removed from a pure rationalist terrain. In the closing section of the thesis (*Epilogue*), inspired by the CLIL approach pursued here and supported by the findings of this investigation, a metaphorical conceptualisation of learning as 'understanding' and 'meaning making' is contemplated.

Prologue: Learning as contemplation and participation

This Prologue indicates a conceptualisation of learning from a moderate relativist perspective, and an affiliation to a more inclusive understanding of learning of this phenomenon.

Weaknesses in the narrow rationalist account of learning have encouraged scholars to rise above the view of learning as solely an acquisition of true propositions and consider other aspects of the human psyche that come into the equation of learning. An early critique of views of learning grounded in narrow rationalism comes from Dewey (1916/1966) who whilst accepting the importance of propositions, he subsumes conceptual and propositional acquisition to a wider capacity, that of judgment which incorporates alongside cognitive factors, other factors such as ethical, aesthetic, and motivational factors. Thus, learning changes from a pursuit of the universal truth out there into the pursuit of one's own understanding of the world around, which paves the way towards a more relativist view of learning.

Other philosophers also propose accounts of learning that take it beyond the learning of true propositions. Passmore (1980) explicates learning in terms of capacities necessary for the learning action to occur, whereby the notion of capacities extends well beyond the mental realm as they grow as a result of 'experience, imitation or deliberate teaching' (1980:37). Thus, in this conceptualisation of learning the passive contemplator often depicted in the rationalist accounts, becomes purposefully and actively involved in furnishing their own mind. In addition, Swann (2009) conceptualises learning as problem solving, a fairly open-ended process characterised by critical and creative dimensions. Finally, Luntley (2005) proposes learning as the acquisition of insight which is realised through the interplay between the abstracted notions, i.e. theoretical background knowledge and a capacity to attend to or to become one with the learning event as this progresses.

In keeping with Hager's cautioning about accepting either the narrow realist or the absolute relativist extremes (2005), this study draws on literature which conceptualises learning as both reasoning (contemplation) and acting (interacting with others, tasks and tools). More precisely, learning is about being acted on and acting upon the world, about developing insight and growing not just intellectually but also as a person. Both the more individual psychological factors and the social and cultural context equally shape learning; which of these factors come more to the fore at any one time depends on individual learning instances. Learning remains an ever complex phenomenon and therefore, no form of learning is regarded as superior to others. Finally, learning is, to some extent, about acquiring propositions and accepting the values of one's own community through some form of apprenticeship; nevertheless, it is also about questioning the body of knowledge with which one is presented with a view to searching one's own identity, and its relation to what is being learnt.

II.1 AN EXPLORATION OF THE UNDERPINNING THEORETICAL STRANDS

In this first part of the chapter, I shall look at how learning is explicated under the socio-cultural and the cognitive-constructivist strands, the ontological and epistemological assumptions underpinning these different views and the possibility of bridging such diverging perspectives for a better understanding of the learning phenomenon. The section ends with an advocacy for meaning as the central unit of analysis in the understanding of human cognition.

II.1.1 A brief overview of the cognitive-constructivist and the socio-cultural theoretical perspectives

I shall open this sub-section with Bruner's reflection on the intricate task of creating an overall theory of learning which he feels would need to account for both extremes: on one hand 'why mental development is so steadfastly invariant and resistant to inspired pedagogy', and on the other hand 'why mental development sometimes leaps swiftly brilliantly opportunistically' (1997:70). The two perspectives emerge from different world views; the former reflects 'the stoicism of principled pedagogical realism', whilst the latter depicts 'the pedagogical optimism of cultural revolutionaries' (*ibid*). In what follows, two equally potent theoretical perspectives are discussed in detail with a view to corroborating some theoretical constructs from both paradigms for a better understanding of the learning phenomenon.

II.1.1.1 Learning explicated through internalist and externalist lenses

The early days of modern psychological research reveal psychology as a discipline which has investigated the nature of human learning a great deal, but which has offered more often competing, than complementary explanations with regards to the human learning mechanisms and processes (Hardy-Leahey and Jackson-Harris, 2001). Thus, the proposed learning mechanisms that would cast light on the nature of learning tended to fall under either upward reductionism which holds that all human mental processes are derived from the environment, or downward reductionism which posits that mental functions are innate (Valsiner and Van der Veer, 2000).

In brief, behaviourists restore the role of the social environment in human development with an understanding of it as a one way enacting upon the child (Perret-Clermont *et al*., 2004); the nativists regard children as '*fabricated* out of genetically predetermined maturation'(Karpov, 2005:5); the cognitive-constructivists stoutly maintain the idea of internal genesis of thought and its outwards expression (Anderson, 1993; Von Glasersfeld, 1995); the social-constructivists propose learning as recurrent construction of own and others' knowledges (Bauersfeld, 1988); and finally, the socio-cultural supporters postulate that human consciousness arises as a result of social mediation and use of cultural artefacts (Lantolf and Poehner, 2008).

There still seems to exist a certain degree of discontent at the comparative lack of insightful explanation of human learning offered by existing theoretical models and metaphors. For example, Clark (2005) insists that most of the established paradigms (behaviourism, cognitivism, conceptual analysis, constructivism, and socio-cultural theory) fail to offer a satisfactory explanation or a comprehensive theory of learning, and that scholars should seek support from the more current developments of connectionist cognitive psychology, particularly from a strand coined as 'neurophilosophy'. This is founded on studies focusing on the brain-basis for learning and thus trusted to have potential to generate a more viable alternative theory of learning (Kelly, 2011a&b). Whilst it is true that there is still a great deal to uncover about learning through the lenses of cutting edge disciplines, some of the theoretical constructs proposed by the constructivist and the socio-cultural perspectives can be powerful explanatory tools particularly if corroborated.

Thus, for now, I shall remain with the two influential metaphors as proposed by Sfard: on the one hand there is the constructivist metaphor of learning as 'acquisition' and on the other hand the socio-cultural take on learning as 'participation' (1998).

Generally speaking, constructivism delineates learning as a qualitative reorganisation of knowledge structures, i.e. it views learning as a process of epistemic construction (Mascolo and Pollack, 1997). A well established brand of constructivism, cognitive or radical constructivism (Von Glasersfeld, 1995) also referred to as a psychological variant of constructivism is greatly indebted to Piaget's pioneering work (1955, 1970/1988). Radical constructivism operates with an understanding of cognitive development as being triggered by the child's active involvement in the direct exploration of

the environment, whereby the view of mind is that of an organised group of logical operations which mediate between the individual and the world, with the socio-environmental elements being there only to prompt rather than impact on the child (Bruner, 1997). Action in a Piagetian acceptation is instrumental activity that manipulates a pre-existing independent reality. It follows then, that Knowledge of the world is not found but made through the mediation of these mental operations. Mental growth is moving from simpler to more complex systems of logical operations and it happens through transformation and internalisation of individually driven action into thought.

Radical constructivism attends to the individual and the highly abstracted operations of the mind in great detail; nonetheless, in doing so it presents individuals as rather disconnected from the world around. Piaget firmly believed that development comes from within the child as they construct their own understanding of the world (Perret-Clermont *et al.*, 2004). However meritorious Piaget's work remains, intersubjectivity is left unexplained in the radical constructivist account of cognitive development (Bruner, 1997).

By contrast with the cognitive-constructivist account which holds as central highly abstracted mental operations as a mediators, the socio-cultural theory attaches great importance to human or tool mediated activity, and also places at the heart of intellectual growth and development the ability to employ language in order to cognitively interact with others and make sense of our own worlds.

Vygotsky proposes that human behaviour and mind should be analysed in terms of 'purposive and culturally meaningful actions rather than in terms of adaptive biological reactions' (Kozulin, 1998:13). The manipulation of tools and the mediational interaction takes the child onto a learning space of, theoretically, limitless developmental potential. In other words, through mediational means (tools or the more knowledgeable others) children become able to rise above their actual level of understanding and performance and ascend to a level of potential development (Vygotsky, 1978). Thus, under this framework the context where growth occurs is a social one, the tools employed are historically and socially determined, the children come to master these tools through an apprenticed action, and higher order thinking shapes up as a result of the social influence.

In short, if mental processes are independently construed (as argued in Piaget's work), from a socio-cultural perspective, adults as representatives of

the sociocultural environment, hand over the psychological tools they master to children through mediation. This is where the internalist vs. externalist tension appears to be at its highest. On the one hand, there is a view of the child as a 'lone scientist' (Bruner, 1985:25) whose exploration of the world is sustained by innate mental functions, whilst, on the other hand, children interact with adults who exteriorise and model the psychological tools in order for children to internalise and transform them.

This brief overview of the two perspectives emphasizes almost two different world views. Given that one type of learning is fuelled from the inside (innate curiosity and mental operations) and the other is supported from the outside (apprenticeship guided by adult), searching for any common ground between the two may seem futile. The following section however explores the philosophical underpinning of these two paradigms and adheres to the argument that whilst insisting to identify common ground between the two can result in unnecessary oversimplification (Bruner, 1997:66), there can be great benefit in noting their complementarities.

II.1.1.2 Philosophical anchoring

Scholars of a more purist theoretical persuasion maintain that the fundamentally different epistemological and ontological ground on which the socio-cultural and the cognitive-constructivist approaches are founded allows little scope for reconciliation between the two (Frawley, 1997; Packer and Goicoechea, 2000). One major question is whether one should diligently subscribe to one or another of these approaches on grounds of their ontological and epistemological incompatibility, or whether following Van Dijk's advocacy (2006a) one needs to explore the boundaries between disciplines and paradigms where the real tensions arise, in order to see how concepts from rival paradigms can be complemented.

The cognitive-constructivist theory of learning (mind located in the head) can be traced back to philosophical influences from Kant and Descartes, whereas the socio-cultural theory (mind located in the social interaction) is in part influenced by Marxist ideas and, to some extent, predicated on Hegel's work.

With intent to refute idealism and metaphysical speculation, Kant proposes that the answers to the great philosophical questions can come from an examination of our own mental faculties. Kant proposes that space, time,

causality and object are not necessarily the features according to which the universe is organised but categories innate to mind (a-priori) which we apply to make sense of the world. This suggests the existence of a reality ('noumena') independent of one's mind and will, and a reality which one's mind filtrates (phenomena). It follows, then, that the physical objects belong to reality and the mental ideas (representations) belong to each individual's own apprehension of reality. Kant insists that people can never apprehend the world of the noumena because of the imitations of the human mind; an individual will come to know reality only to the extent to which their own mind makes sense of it.

The thesis that the mind actively shapes one's perception of reality resonates with the view of the constructivist proponents; a 'romantic' version of constructivism (Von Glasersfeld, 1995) would encourage the pursuit of the one given reality whereby individuals strive to arrive at a correct representation. Further down the line a moderate constructivism advocates the one reality but multiple representations of it (Pring, 2000), whereas at the other end of the continuum there are scholars supporting the idea of multiple realities.

In addition, particularly the radical constructivism, with Piaget as the major proponent, seems to have embraced Kant's and Descartes' dualist ontology (the inside - the outside, the knower and the known, the individual – the world). Furthermore, Piaget took from Kant the insight that the knower is active, and a belief that the universal cognitive structures shape our experience of reality. Piaget as Kant considered the human individual 'a cogito' an epistemic being fundamentally unchanged by the construction of knowledge as it is only the functions of the mind (as inner workings) which act upon the environment in order to make sense of it with very little or even no influence from the environment on the mental functions (Piaget, 1970/1988).

Turning one's attention to the other scholarly camp, Hegel and Marx can be identified as the philosophical initiators of the, now, popular socio-cultural ideas advocated by Vygotsky and further developed by followers such as Leontiev, Luria and Galperin (Frawley, 1997).

Hegel takes issue with the sharp duality between reason and sense, and proposes a completion which requires an ontological theory of self-transcendence and relation which goes beyond Kant's fundamental dualisms.

He contemplates some of these dualisms, the infinity and the finite (freedom and 'ought'), the universal and the particular, and spirit and the nature, and postulates that that they do not face one another as two independent realities, but instead the former (in each case) is the self-transcending of the latter, and this is how the absolute reality can be achieved. The overall argument being that rather than erecting boundaries between the two, one needs to look at their synthesis into a whole unit (Wallace, 2005).

This rejection of a dualist psychological representation of man, which emanates from Vygotsky's work, can also be traced down to the Dutch philosopher, Spinoza, who proposed that mind and body are one entity. Thinking and physical activity are inherently part of each other and it is precisely this symbiotic relation which creates the entirety of the human being. Another Hegelian idea that seems to have inspired the Vygotskian thought, is that experience is not entirely individual but mediated by our historic, social aesthetic and religious heritage (Wallace, 2005). Following from this, Vygotsky proposes that human consciousness comes from the unity of biological brains, cultural artefacts and activity (Lantolf and Poehner, 2008). The aim is not the elucidation of this unity by breaking it into more manageable component parts; rather, the intention behind socioculturally informed investigations is a sustained attempt to understand the functional harmony of the whole.

Marx's dialectical materialism seems to largely pervade Vygotsky's thinking about the nature of human consciousness and its development (Lantolf and Poehner, 2008), and even more so the Russian scholar's notion of Zone of Proximal Development (ZPD). One needs to consider this theoretical construct against the background of the Soviet revolution. Bruner's comment 'What better instrument than ZPD for assuring the promise of almost limitless growth?' suggests socialist inflections in the ZPD construct (1997: 70). In the same vein, Daniels (2006) notes Vygotsky's liberationist version of the Marxist philosophy, more precisely the social formation of the mind, i.e. the power of the many to unlock each other's potential and thus to revolutionise the world. In Marx's own words evolution is more than contemplation: 'philosophers have only interpreted the world, in various ways; the point, however, is to change it' (1972:145).

II.1.1.3 Bridging the two perspectives

II.1.1.3.1 Ontological and epistemological complementarity

The philosophical anchoring of the cognitive-constructivist and socio-cultural theories presented in the previous sub-section orients the discussion towards a need for an analytic comparison between the ontological and the epistemological assumptions underlying these schools of thought in order to identify potential dimensions on which they can be corroborated.

Simply put, ontology, a branch of metaphysics, is the philosophical study of existence or the provenance of reality. Perhaps, it might be useful to start the ontological examination of the two schools of thought with a reminder that answers need to be sought in the space where our own experience and reality merge, i.e. in a 'reality' which is neither entirely given nor exclusively humanly– fashioned.

Ontological accounts are left untold, to a great extent, in constructivist proposals which tend to preoccupy themselves mostly with epistemic matters. This can partly be due to the difficulty in which scholars are left by the more widening Cartesian dualisms. Dewey remarks that the dualist ontology on which the cognitive-constructivism rests poses problems for a coherent theory of human knowledge learning and action. He goes on to note that 'an identification of the mind with the self' (1916/1966:293), in other words saying that mind as 'cold' cognition (DeCorte *et al.*, 1996:491 *cited in* Cobb and Bowers, 1999:5) is all there is to an individual, implies that the self is independent of the outside world and thus self-sufficient. This creates an abyss between the inquisitive mind and the world to the extent that there arises a question of 'how knowledge was possible at all [in the first place] '(Dewey, 1916/1966:293-297).

Much of the appeal of the sociocultural theory derives from the challenge it poses to the dualist ontology. Scribner (1990/1997) notes three key elements at the core of the sociocultural approach to human cognition: cognition is culturally mediated by material and semantic artefacts, cognition is founded on purposive activity, and cognition develops historically. She goes on to emphasize that these key elements indicate clear intention to remove the segregation between the individual and the world assumed under the internalist paradigm. Cognition becomes a complex social phenomenon which

is distributed and not divided amongst mind-body activity on one hand, and culturally organised settings on the other hand (Lantolf and Poehner, 2008).

The ontological stance of socio-cultural theory transpires through proposals such as: learning involves the construction of identities, and learning can be regarded as historical production, transformation and change (Lave and Wenger, 1991). Packer and Goicoechea (2000:231-234) aptly capture the ontological themes underpinning the sociocultural perspective as follows.

- The human person is not just a natural entity but also a social and a historical one whose information and transformation occurs in conjunction with other members of a community;
- The relation between social context, people and objects is sustained in practical activity; nevertheless, the person is formed not only in practical activity but also through interpersonal relations as without recognition there is no self and no self consciousness;
- The person engaged in relationships in the social context is fundamentally split, i.e. the person needs to split in order to become a social subject as there are costs to membership to a community – on one hand there are the demands which the community imposes on the individual and on the other hand the need to discover oneself; and, finally
- The person strives to achieve identity in an effort to transcend this split in order to harmonise all the facets that one's identity may take.

To some extent reminiscent of Maslow's (1968) classic hierarchy of needs, these themes underpinning the socio-cultural ontology reveal a progression in people's social awareness of self and others from performing basic interactive communication, to seeking social recognition and ultimately to striving for a harmonious multifaceted identity.

Epistemology, a branch of philosophy, is concerned with the nature of knowledge. Whilst ontology debates the nature of reality and the dimensions of truth, the latter focuses on the emergence of knowledge. If trying to establish what the truth is proves to be elusive, trying to establish what or whose knowledge we should accept as valid is no less complex a debate.

As hinted above knowledge from the socio-cultural perspective is first social and later individual (Lantolf and Poehner, 2008); it implies participating and belonging. Knowledge will be always tied up with the context, i.e. is situated,

and will represent the discourse and social practices of the community to which the learners belong. By contrast, from the cognitive-constructivist viewpoint knowledge shapes up at abstracted levels, through the individual's endeavours; it acts on the interpretive role of the learner, it is a personal possession first, and only then, it may become shared (Mason, 2007).

Therefore, while looking at knowledge from a socio-cultural perspective means to establish as a unit of analysis the situated collective activity constructed by individuals, from a radical constructivist perspective, the unit of analysis remains the individual's mental operations which can generate abstracted knowledge that is transferrable. Critical observations are generated from both camps. Cognitive scientists (Anderson *et al*., 1996 *cited in* Mason, 2007) point out that not all knowledge is tied to the situation in which it has been learnt and that under certain conditions transfer of knowledge can happen, that is to say abstract instruction can be powerful. On the other hand, Wertsch (1990) maintains that conceptual change cannot be explained only in terms of modifications to conceptual structures; rather, the differences in contexts and discourse practices as well as the nature of the participation in community practices will become the essence of any conceptual change.

One aspect that becomes obvious is that the mental processes and schemata of cognitive activity emphasized by radical constructivism are formed, if by the action of the individual, in and through participation in specific social processes. In other words, the very formation of an inner mental realm of deliberation and cognition is a consequence of culturally and historically situated practices. Therefore, one can safely argue that knowing is 'grasping' and 'acquiring' but also 'a way of relating' and 'participating' (Packer and Goicoechea, 2000:234).

Epistemological alignment of the two paradigms has been discussed by several commentators. The work of those advocating for a bridging between the internalist and externalist paradigms stretches from suggestions of implicit commonalities in the two paradigms to proposals of corroboration based on complementarity. For instance, Frawley (1997) deems a unified external-internal investigation as far more beneficial then research on either side unaware of what the other perspective has to offer. In a similar vein, Bernstein argues that there is 'no gain from remaining trapped in 'the Cartesian anxiety always on guard to defend computationalism against culture

and vice-versa' (1983:68). Another scholar who also worked at the border between the inner idealised objective world and the world of subjectively lived experiences is Wittgenstein whose earlier work 'Tractacus' has inspired much of the modern internalist cognitive science whilst his later work 'Philosophical Investigations' strikes a chord with the Vygotskian views.

On a less general note, Glassman argues that the Piagetian internalist account of cognitive development and the Vygotskian one, although traditionally held as opposite, are in actual fact 'remarkably similar' (1994/1999:282). The arguments set forth are that Vygotsky implicitly admits that children construct their cognition, although he does not elaborate on this notion sufficiently, and that, similarly, Piaget admits the role of the social environment.

In agreement with Bruner (1997), Karpov (2006) notes that it is only on a superficial level that one may contemplate ideas such as Piaget's 'socioculturalism' and Vygotsky's 'constructivism'. He argues that although both paradigms operate with the notion of environment, they attach significantly different roles to it, i.e. Piaget regards the social environment just as a source of disequilibria whereas Vygotsky holds it as the very source of cognitive growth.

Those proponents of a constructivist revision of Vygotsky's theory (e.g. Glassman, 1994/1999; DeVries, 2000; Shayer, 2003) highlight the Russian psychologist's proposal that scientific concepts start their development rather than finish it at the moment when the child learns the term or the word denoting the new concept (Vygotsky, 1934/1986:159). They argue that Vygotsky implicitly admits that 'scientific concepts' are not handed over by adults or 'simply acquired by rote' but they evolve as a result of intense mental activity (Vygotsky, 1934/1986:157-9). However, Karpov (2006) insists that Vygotsky's (1934/1986:148) statements are in opposition to constructivist views. For instance, with regard to the formation of scientific concepts Vygotsky invokes the process of appropriation. This means that the concept is presented to children in the form of an 'initial verbal definition', and then applied systematically through social interaction until the notion gradually comes down to concrete phenomena (by deduction).

However, there are observers who maintain that educational psychologists need to concentrate on complementing the two paradigms rather than attempt to pin down similarities. Thus, Cobb (2005) advocates theoretical pragmatism. He proposes that the apparently 'irreconcilable gap' between

knowledge as the result of a process of cognitive reorganisation, and knowledge a process of enculturation into a community of practice, be bridged. He explains that both individual constructivism and social constructivism are equally relevant; 'when one is taken to be prominent, it is only against the assumed background of the other' (2005:51).

In the same vein, Packer and Goicoechea (2000) note that both perspectives offer valuable insight: without attention to community the person who learns would be a merely unchanging epistemic subject exploring an independent world. Conversely, without attention to the learner's attitude and activity the learner may look like a blind follower of predetermined cultural forms.

Furthermore, other calls for the corroboration of the cognitive and social perspectives come from situated learning theorists (e.g. Hatano, 1993 and Saxe, 1991), and modern cognitive linguists such as Frawley (1997) who proposes 'sociocomputationism'. By this he means 'a computationally sensitive reading of Vygotsky but also 'an acknowledgement of the narrowness of computational accounts' (1997/1983:26). He envisages a cognitive science which perceives the units of mind neither wholly internal nor external but 'perched on the mind-world line' (1997/1983:65). In a similar fashion, Sfard advocates a corroboration of the internalist and externalist paradigms as this would *'bring to the fore the advantages of each […], while keeping their respective drawbacks at bay'* (1998:11).

In this subsection it has been shown that cognitive-constructivism presents itself as a theory of Knowing (it attends to epistemological structures and processes) while the socio-cultural perspective offers a broader historical and cultural context. The work undertaken in this study subscribes to the view that 'individuals and culture enact upon each other' *(*Packer and Goicoechea, 2000:228); that learning involves both knowledge building and identity searching, and that it would be beneficial to corroborate insights delivered by both perspectives rather than advocate one over the other. Finally, Lave and Wenger's (1991:116) witty remark that '...knowers come in a range of types, from clones to heretics' appears to me as a recognition of the extraordinary impact of the chosen learning path on individuals. In brief, this study endorses a view of learning as knowledge seeking under the governance of a balance between *following* and *free thinking*, i.e. learning is an epistemic process as well as an ontological one.

II.1.1.3.2 Internalisation as a learning mechanism: the Piagetian and Vygotskian accounts

The previous sub-section touches on the ongoing interest shown for the learning mechanisms proposed by the (now) classic works of Piaget and Vygotsky whose contributions in the understanding of the learning phenomenon are noted by Bruner (1997) as equally valuable and complementary. He acknowledges Piaget's merit of highlighting the role of the logic-like operations in human mental activity, and finds merit in Vygotsky's tenet that the development of an individual's intellectual power depends upon one's ability to access a shared social, cultural and historic space and use elements from within these external dimensions as tools of mind.

Cautioning about the naivety of a conceptualisation of cognition as solely individualistic or non-individualistic, Frawley notes that there is evidence from both sides: mind as a social product (even in the case of identical twins with 'similar biological features molecule for molecule' their thoughts will be different) at one extreme; and mind as an isolated neurobiological entity, at the other end (the compelling example of consciousness occurring outside the social world, i.e. consciousness operating outside REM sleep and anaesthesia)(1997:4).

Before going on to outline the two psychologists' take on internalisation as a learning mechanism, perhaps it would pay to take notice of Harre and Gillett's insightful observation that any model of a learning mechanism represents a way of understanding that phenomenon; the main purpose of any learning model being that of making overt those processes unavailable to direct observation (1994). Thus, one has to remain aware of the fact that these cognitive models, however abstracted, are still modelled on a particular scholar's understanding. They will be heavily influenced by the proponent's available metaphors and discourses, and therefore it does not necessarily represent those brain processes through which the performance occurs. From this perspective it is proposed here that any learning model remain a metaphorical representation open to reinterpretation and further-elaboration.

Marti (1996) also agrees on the metaphorical value of the notion of internalisation and observes that, interestingly, this notion is central to both theorists. From Piaget's perspective this largely represents a developmental tendency coming from within, which sets into motion the passage from sensimotor intelligence to representative intelligence (Piaget, 1947/1972).

From Vygotsky's standpoint internalisation is simply a transfer of the properties of social processes onto the psychological plane. However, both psychologists, to some extent, as well as subsequent literature, show that internalisation does not occur in the form of a one way process, i.e. exclusively from inside to the outside or entirely from the social world onto the individual.

Piaget (1977/1985) explains cognitive growth as arising through a dynamic interplay of disequilibration (a state of imbalance) and equilibration (a state of balance). The search for equilibration is realised through two polar but complementary mechanisms: assimilation and accommodation. The former is the cognitive process by which a person integrates new perceptual or conceptual matter into existing schemata. The latter is the process by which an existing schema grows, is modified or an altogether new schema emerges in the light of nouvelle information or previously unencountered stimuli. Perret-Clermont and colleagues propose that cycles of disequilibration and equilibration could be regarded as a self-regulatory process primarily led from within by the Piagetian child who is actively seeking knowledge expansion (Perret-Clermont *et al*., 2004).

Marti (1996) notes that the Piagetian account does not present the internal psychological reality as a 'simple product of transportation of external knowledge'; rather, this is conceived as a 'new level of functioning' or 'structuring activity' (1996:61). This structuring activity increases in speed as one moves from discovery (experimental trial-and-error behaviour supported by sensorimotor intelligence) to invention (manipulation of abstract representations sustained by representative intelligence). Thus, during this passage from sensorimotor to abstracted operational activity, one accumulates a sufficient amount of abstracted representations to be able to operate without having to rely on senses or external stimuli. Invention and representation are interdependent; they follow from each other because in order to invent one needs to manipulate representations mentally. Conversely, in order for the sensorimotor schemata to progress to a stage where they become representations, multiple inter-combinations are needed. In other words, one witnesses the emergence of a faster and more hidden mode of functioning which relies on manipulations of abstracted representations, mental models or even whole schemata. Such accounts highlight a subject's capability to function intellectually with little or no

dependency on external data, i.e. the potential mental abstracted operations have to sustain a person's claim to self-control and autonomy.

Clark (2005) adds a neurological perspective in that he translates the more metaphorical model of assimilation-accommodation into a neurologically grounded connectionist model. Clark's description of assimilation and accommodation captures the passage from a sensorimotor level to a higher representational level, and it does so with an insistence on the unity of brain and mind. From a neurological viewpoint *assimilation* occurs through the movement of data from an outer layer of sensory cells through pathways leading inwards towards a second layer of neurons where data of prior experiences is stored. This data is sufficient to enable the decoding of the incoming experience without altering synaptic connections and weights. When the newly encountered experiences exceed the stored data in terms of complexity or novelty then 'second layer cells acquire content [...] and new synaptic connections are formed either by revised weightings or new dendritic linkages for the redeployment of concepts*' (*Clark, 2005:683). New neural pathways are constituted and thus, the overall neural system becomes enhanced and prepared for the future assimilation of similar experiences.

In his later work, Piaget posits that 'there is no structure apart from construction' (1970/1988:140 *cited in* Fosnot and Perry, 2005) thus, admitting that Knowledge is formed neither through solely experience of objects nor through an innate programming; rather, Knowledge is formed through successive constructions. In spite of this concession he appears to make to the externalist perspective, there are commentators who contend that Piaget's account of internalisation can only benefit from corroboration with the Vygotskian perspective.

Having explored the notion of internalisation from a Piagetian perspective, I shall now turn to the Vygotskian externalist account, after clarifying a few crucial terms. Frawley (1997:94-95) explains that the Russian for internalisation is 'vraschivanie' for which the literal translation is 'ingrowing', and highlights the fact that the Russian notion has a dynamic and developmental character which is to some extent lost in translation. The Russian term implies that 'higher thought emerges out of active, nurturing transformation of externals into personally meaningful experience'. Then, 'meaning ' is translated from the Russian 'osmyslivanie' which actually reads 'significancing', and 'experience' is the translation of the Russian

'perezhivanie' which reads as ' living through' . Thus, when one defines internalisation in Vygotsky's terms they 'are describing the ingrowing of lived experience into personal meaning' (*ibidem*).

The idea of a social genesis of thought constitutes the basis of the Vygotskian account of internalisation. In Vygotsky's words 'every function of the child's cultural development appears twice: on the social level (inter-psychological plane), and later on the individual level (intra-psychological plane)' (Vygotsky, 1978:57). These functions are initially constructed outside, in the inter-mental zone, i.e. in interaction between individuals, and only then they become internalised (Kozulin, 1998 and Karpov, 2005). Thus, according to Vygotsky, internalisation transforms social phenomena into psychological phenomena.

Vygotsky does not provide a clear account of the mechanisms of how internalisation occurs but he makes it clear that the internal psychological functions are not a mere copy of the social one. Such perceptible constructivist inflections in the theory a socio-cultural pioneer have fuelled debates around the extent to which internalisation can be regarded as *copying*, *transformation*, or *reinvention*. Several scholars seem to agree that Vygotsky's notion of internalisation suggests an intricate bonding between the external and the internal planes, i.e. internalisation implies both internal reconstruction and co-construction (Marti, 1996; Wertsch, 1985; Lawrence and Valsiner, 1993; Van der Veer and Valsiner, 1994; and Rogoff, 1995).

The *constructive* take on internalisation emphasizes the individual's agency and implicitly suggests that the appropriation of tools is not a matter of merely handing them over. Vygotsky himself argues that internalisation is not a question of copying, and that it 'is far from being a purely mechanical operation' (1994:153 *cited in* Hogan and Tudge, 1999). Bereiter (1985) takes this even closer to the internalist paradigm in positing that internalisation is both an individual and a constructivist process and it does not reflect an automatic reproduction of the external events. Additionally, Lantolf and Thorne (2006:143) regard agency as more than 'voluntary control over behaviour'; it also 'entails the ability to assign relevance and significance to things and events'. Based on these, it could be argued that internalisation occurs both intermentally and intramentally (Van Lier, 2008).

The idea of internalisation has been discussed a great deal in relation to the role of language. Van der Veer and Valsiner (1994) argue that internalisation cannot be understood without the notion of semiotic mediation as it is the

semiotic nature of communicative interactions that makes internalisation possible. In light of this, internalisation has been conceptualised as intentional construction or transformation, an idea particularly supported by analyses which show that external language (for others) takes on a new form when it becomes internal (private). Karpov (2006) points out the difference between transformation and reinvention (reconstruction), and argues that the internalisation of the psychological tools is based on a mechanism of transformation. For example, internalising speech into private speech is fundamentally a process of transformation, i.e. social speech becomes predicative and abbreviated rather than a genuine reinvention.

Furthermore, Vygotsky's followers maintain an emphasis on semiotic tools as mediators and explain the internalisation of psychological tools in terms of mastering the use of the tool rather than the tool itself (Vygotsky and Luria, 1994). Thus, under a neo-Vygotskian portrayal, it is the procedures which are the mediators of mental processes, i.e. internalisation becomes an internalisation of procedures rather than of signs (Leontiev, 1931, 1959; Davydov, 1990/1972; Bruer, 1993). This view is also supported by Wertsch and Stone (1985) who comment that internalization is not so much about the tools themselves but about what they can do. In the same way, Lantolf (2003) explains that internalization does not mean that something is literally within the individual or in the brain but instead it refers to the subject's ability to perform a certain action independently of the physical presence of things.

Both Piaget and Vygotsky put forth complex accounts of internalisation. Piaget's vision emphasizes the eventual and triumphant autonomy of mental operations from any external stimuli; conversely, Vygotsky's vision places greater emphasis on the interplay of the internal and external planes. The empirical investigation in this study is not set up to prove the superiority of either vision of internalisation. The setting up of my field investigation (classroom observations and interview-based metacognitive reflections) is inspired by a credence that internalisation occurs both intra-mentally and inter-mentally, and that these two accounts of internalisation are bound to become evident to varying degrees in any learning instance. Thus this study lies at the boundary between internalism and externalism where according to Frawley it pays off to note occurrences that indicate 'how the external world matters to thinking', and 'how the mental representations impinge on the context' (Frawley, 1997:21).

II.1.2 Learning as meaning making under a socio-constructivist theoretical umbrella

As shown in the previous sub-sections, there is scholarly support for the corroboration of a cognitive and a social angle. In order to accommodate the scope and complexities of the current study, I shall opt for a socio-constructivist theoretical terrain which defines cognition as arising at the interface between the individual and social interaction. My investigation holds a central interest in children's learning as meaning making; a process during which children are likely to inhabit equally and simultaneously more private and shared learning spaces. A socio-constructivist take on learning as meaning making will enable me to remain alert throughout my analysis to aspects related to both acquisition and transformation of knowledge. Since my study captures both learning interactions with others and tools, an exclusively cognitive-internalist or social-externalist account would offer only half the story of learning.

Lave and Wenger (1991) advocate that *knowing* and *being* are so strongly predicated on each other that it becomes almost impossible to discuss one without implications for the other. Knowledge building and restructuring is a potent metaphor for conceptualising learning; however, one needs to see beyond the conceptualisation of human beings as epistemic entities, and start questioning the purpose to which all of this knowledge acquisition occurs. This points to a complementary direction which depicts learning as an on-going redefining of one's identity, and which explicates what gives individuals the impulse towards knowledge building in the first place.

In general, socio-constructivism is traced back to the works of both Piaget (particularly his work before his death in 1980) and Vygotsky (Fosnot and Perry, 2005). Vygotsky's idea that meaning should constitute the central aspect of any unit of study (Perret-Clermont *et al*., 2004) resonates heavily with the work of Jerome Seymour Bruner who to date remains one of the most distinguished socio-constructivist scholars. Bruner's theoretical stand appreciates the major contribution of the individual in making sense of the world; nonetheless, he also attaches great significance to the fact that one person can appropriate the knowledge of another, and that the cognizing individual and culture enact upon each other (1990, 1991). As early as the 1950s Bruner strongly advocated meaning as a central unit of analysis in the understanding of human development, a project which was discontinued through the prominence of cognitive science in psychology. He was well aware

of the value of cross-discipline explorations, and advised that psychology should join forces with 'sister interpretative disciplines' (1960, 1990:2).

Bruner's vision of a 'meaning–centred culturally-oriented psychology' has inspired the rise of new strands in psychological research over the past thirty years (1990:15). Thus besides the strands of a more traditional affiliation such as radical constructivism (Von Glasersfeld, 1992), an ecological kind of psychology has gained a prominent role in the development of psychology as a modern discipline. In addition, social constructionism has taken off and also discursive psychology has established itself. Thus, newer arrivals on the scholarly scene such as *ecological cognition*, *every day cognition, and distributed cognition* come to challenge the focus that has previously been placed on cognition as a detached entity from its natural settings (for a comprehensive account on new strands in psychological research see Molder and Potter, 2005; Edwards and Potter, 1992; and Harre and Gillett, 1994).

A socio-constructivist theoretical orientation has been coined by Von Glasersfeld as 'weak constructivism', and its proponents identified as 'trivial constructivists'. This is so because he argues that a socio-constructivist paradigm bears a less strict epistemology by 'permitting both knowledge and morality to enter from the world' (1992:170).

Scholars such as Greeno who emphasizes the socially and culturally situated nature of activity (Greeno, 1989; Greeno *et al.*, 1998), and Bauersfeld (1988) who develops the interactionist variant of constructivism, have paved the way to socio-constructivism. This strand settles on a moderate relativist ground as it looks at meaning making as the result of the individual-in-social-action (Cobb, 2005). Based on the overall socio-constructivist tenets and also following from Bruner's advocacy, learning as meaning making implies a consideration of the relations between the following key theoretical notions: discourse, cognition and knowledge.

Unlike a pure linguistic framing, *discourse* appears to be a more accommodating frame for the investigation of meaning making which occurs during learning. This is because discourse accounts for the roles of the environment, the communicative situation, and also the participants' features become relevant. This is to say that although each individual constructs their own knowledge, one does so in the context of activities carried out in conjunction with others (family, school, and community). Thus, meaning is not solely semantic construction but interpersonal exchange within a

community of practice and therefore, it needs to be contextualised in a much broader frame than just a linguistic one. Some observers propose that concepts are located between minds, and by this they suggest that conceptual knowledge is inseparable from the social practice of discourse. In addition, scholars such as Van Dijk (1997), Graesser *et al*. (2003) and Graesser *et al*. (1997a) define meaning making in terms of context embedded discourse processing because they regard the mental models and schemata as formed in and through participation in culturally and historically situated practices.

Further, the socio-constructivist strand reconceptualises *cognition* as 'cognition in the wild' under the argument that cognition should be considered in its natural habitat (social and cultural) without denying the influence of mental representations at the same time (Hutchins, 1995). The now classic article by Pintrich, Marx and Boyle (1993) called for researchers under the cognitive constructivist strand to move beyond 'cold' cognitive factors and consider motivational and affective factors as well. In the same vein, Mason (2007) and Jovchelovitch (2007) advocate a shift towards an investigation of how cognitive (knowledge processing ability), motivational (epistemic beliefs) and affective factors (self-esteem, identity sense) interact in particular contexts. There also seems to be agreement regarding the unit of analysis of cognition itself which must be broader than the individual; one needs to look at the interaction of the individual with the discourse that they access and inhabit (Packer and Goicoechea, 2000; Cobb and Bowers, 1999). In short, in addition to regarding *mind* as biologically tied to the functions of the brain, *mind* also needs to be acknowledged as a historical and cultural product. Cooper and Denner (1998) also advise that interdisciplinary advances linking culture and psychology strengthen the external and ecological validity of psychological theories. The middle ground between universalism and relativism takes on the challenge of achieving a certain level of generalisation while capturing an understanding of diversity, variation and change in human behaviour.

Knowledge under a socio-constructivist interpretation can blur the fine lines between the different types as identified in the literature such as topical, general, procedural, and linguistic. Some make the distinction between shared and personal knowledge; nevertheless, even with this distinction in mind there is an argument that emphasizes the relativity of all knowledge. Knowledge in any domain is constructed and reconstructed by countless different individuals occupying different locations (time, space, culture), and

therefore, diverse world views and systems of value (Chinn, 1998 *cited in* Wells, 2002). This points to how problematic it would be to pin down the exact type of knowledge one displays at a certain point in time. Nonetheless, whatever the type of knowledge one employs to further their understanding, what is paramount is that the building of these types of knowledge is not an end in itself but a means to the ends of recognition and identity.

By following trends in the literature which relate discourse, cognition and knowledge, I intend to ensure sufficiently powerful theoretical support to accommodate a holistic picture of the learning phenomenon, and a fine grained analysis of it. Discourse, cognition and knowledge can all be considered on clines going from a more individual and private end to a socially-shared and culturally-determined end. In my empirical investigation, I am looking at how students make sense of new knowledge and their own learning experiences. For this, their natural learning interactions with others and tools are being considered and therefore, it makes sense to regard cognition as a faculty which grows as a result of a fusion of social, cultural and individual factors. Bruner captures the tantalising game of the mind as follows:

> *The unique mystery of mind is its privacy, its inherent subjectivity. But for all its privacy, mind nonetheless generates a product that is public [...] What is unique about us as a species is that we not only adapt to the natural and social worlds through appropriate actions, but we also create theories and stories to help us understand and even explain the world and our actions in it.*
> (Bruner, 1997:63-64)

In this opening section, I have given an indication of the ideology underpinning the theoretical exploration of the study and have subscribed to a corroboration of the cognitive and social perspectives. The following section will look into more detail at how some relevant theoretical constructs under a socio-constructivist perspective can accommodate the complexities of an investigation around the L2 mediated learning phenomenon. With an acceptance of learning as emerging through an actively sought interaction of the individual with the self, others and knowledge oriented tools, the following section undertakes a more detailed analysis of those mechanisms that sustain the knowledge acquisition and manipulation. This analysis is structured as follows: firstly it looks at some relevant influential learning mechanisms, then it focuses on dialogic learning and its cognitive value and finally, it considers the relation between cognition and discourse.

II.2 A SOCIO-CONSTRUCTIVIST PERSPECTIVE of COGNITIVE GROWTH

This section maintains as central the interplay of socially-driven and the more individually-constituted learning; however, it does so by taking the discussion from a macro level (philosophy, paradigms and epistemology) to a micro level that of specific theoretical notions. The discussion draws to some extent on classic proposals but perhaps to a larger extent on further elaborations set forth in more current literature. Thus, the subsections in this part look at Zones of Proximal Development, scaffolded and collaborative learning, dialogic type of learning, and the relation between discourse and cognition. Finally, a socio-constructivist theoretical framework is tailored for this study and complemented with a rationalisation of the selected theoretical notions.

II.2.1 Zones of Potential Development as a manifestation of both agency and apprenticeship

To date, Vygotsky's notion of 'zone of proximal development' (henceforth ZPD) remains an enduring theoretical construct, largely due to a comparative lack of accompanying explanatory support on Vygotsky's part. Much research has been fuelled by an ongoing interest in the explanatory force such an intriguing concept can unleash to provide useful insights into cognitive development. Although an initial reading of the classic proposal shows ZPD as space of apprenticeship whereby socioculturally constituted tools are handed over by adults, more current additions to research on the nature of learning in the ZPD do not describe it as an event of exclusively one way initiation.

The mechanism that generates the emergence of a zone of potential development is meditational activity which is central to the works of Vygotsky and Feuerstein. Either in the form of socioculturally organised interactions with others, or in the form of interactions with symbolic artefacts, mediation stands at the heart of ZPD, and is credited as the very catalyst of cognitive change in children (Lantolf and Poehner, 2008). Mediation is widely discussed from a more purist angle on the socio-cultural theory (Wertsch, 2007; Van der Veer and Valsiner, 1991; Cole, 1996; Lantolf, 2000, Lantolf and Appel, 1994; Lantolf and Thorne, 2006), but it also approached in literature of socio-cultural orientation which manifests constructivist inflections (Mercer, 1995, 2000; Mercer and Littleton, 2007; Mercer and Dawes, 2008; Wells, 1999a).

The original Vygotskian account proposes that sustained interaction between an adult and a child generates and establishes mediation. This meditational interaction takes the child onto a learning space of, theoretically, limitless developmental potential. In other words, through meditational means (tools or the more knowledgeable others) children become able to rise above their actual level of understanding and performance, and ascend to a level of potential development (Vygotsky, 1978). More precisely, during these mediated interactions an evolving socio-cognitive micro-universe arises which, he portrays, as a progression from the actual level to the proximal level. Once the potential level is being achieved, it becomes the new actual level. This evolution rests on a series of 'completed developmental cycles' (Vygotsky, 1978:85); '...what the child can do today in cooperation and with guidance, tomorrow he will be able to do independently' (Vygotsky 1984/1998:202).

For example, one of Vygotsky's widely cited experiments (1934/1986 *cited in* Luria 1982), describes two children whose independent problem-solving abilities are quite similar when they work independent of any support but whose levels of understanding and performance change drastically between the two children when assisted by a more able mediator. Thus, Vygotsky concludes that by using this approach one can not only 'evaluate stages that have already been completed' but can take into consideration 'what is coming into being what is ripening' (1956:447-448). This appears to capture the essential difference between solo and cooperative performance and the major role of ZPD in revealing a child's true potential (Poehner, 2009).

An unpacking of the notion of ZPD from a neo-Vygotskian angle reveals constructivist nuances in what was initially thought of as a purely socio-cultural construct. Vgotsky's original proposal does foreground the idea of the MKO leading the way and facilitating progression through the ZPD (1978). Nevertheless, it has been argued that such constructivist inflections in the notion of ZPD can be traced back to Vygotsky's own account of internalisation through which he maintains that the appropriation of tools is not a mindless reflex or imitation (1994 *cited in* Hogan and Tudge, 1999). A constructivist reading of ZPD emphasizes the role of agency in progression through the ZPD (Bereiter, 1985). In other words, besides the collaborative mode under which these zones emerge (either through interacting with others or through interacting with tools), the individual's self-generated intervention also comes into play.

With classroom-based learning in mind, ZPD moves on to become an inter-mental development zone (IDZ), according to Mercer (2000). In other words, ZPD becomes a learning encounter created in the course of collaborating interactions with others. From this viewpoint, research proposes interactively-driven and socially-embedded cognitive constructs such as 'joint understanding' (Hogan and Tudge, 1999), 'intersubjectivity' (Wertsch, 1985), and 'the meeting of minds' (Perret-Clermont *et al*., 2004). As Van Lier (2008) points out this view of learning as the product of the interplay between individual agency and collaborative work reinforces that internalisation occurs both intermentally and intramentally.

Precisely because of the popularity of the theoretical metaphor of the developmental zone, Chaiklin (2003) expresses concern with regard to the broad use and rather misuse of the concept, and proposes that ZPD refers only to a discussion strictly kept around the age periods in child development. With similar concerns, Negueruela (2008) makes a distinction between proximal and potential development, with the fist representing a more linear type of development and the latter bringing into relief the Vygotskian idea of a revolutionary type of development shooting ahead in an uneven fashion.

One further elaboration that rests on Vygotsky's representation of ZPD as the interplay of the actual and potential levels comes from Kozulin (1998) who proposes a distinction between a qualitative and a quantitative reading into what is being conceived in the zone. Quantitatively ZPD is a measure of the difference between unaided and aided performance whereas a qualitative interpretation of the zone would highlight those cognitive functions that are absent in the unassisted performance of the child, but which uncover themselves when the child is aided.

Finally, another direction in the study of the notion of ZPD revolves around a tendency to shift from depicting it as a space where progression in learning occurs, to explaining it as an activity which is generated in the course of the learning interaction. For instance, Gallimore and Tharp (1990) favour a view of ZPD as a dynamic process with internalisation as its underlying mechanism. In the same vein, Newman and Holtzman (1993) abandon the spatial metaphor and argue, instead, that ZPD does not encapsulate a space; rather, it is an interactive activity, a 'revolutionary activity', to be more precise, that can lead to cognitive transformation. Thus, for them ZPD is as a 'tool and result' as opposed to just a 'tool for result' (1993:46-47).

II.2.2 Scaffolding with experts and learning with peers

The previous sub-section depicts the Zone as a learning event sustained through both individual agency and collaborative interactions (with others and tools). In tight relation with this conceptualisation of ZPD, this sub-section looks at children as both beneficiaries of a set of culturally constituted tools and active constructors of own experiences and knowledge.

Varela and colleagues note that 'intelligence shifts from being [only] a capacity to solve a problem to [include] the capacity to enter into a shared world of significance' (1991:207 *cited in* Frawley, 1997:31). Therefore, it makes sense to look at children's intellectual becoming as a merging of autonomous reflection and ability to access and inhabit shared learning spaces. In the same line, Duckworth (1987) proposes that a corroborated angle of 'authoring' and 'co-authoring' of knowledge may be beneficial. On the one hand, children need a stimulating problem solving environment in which they can develop their mental schema, independently led by their scientific curiosity; on the other hand, children are in need of guidance and mediation.

I shall open the following two sections with a brief exploration of the construct of human mediation, and then I shall review in more detail literature generated around the notions of scaffolded and peer-assisted learning.

II.2.2.1 Scaffolded instruction

With regards to the interaction with peers, Piaget deems it useful mainly for providing an opportunity for disequilibration, with the mention that after this brief encounter the child continues on their own striving to assimilate and accommodate the new or contradictory ideas to what they already posses. It follows then that Piaget seems to be fairly clear about conceiving development as a result of the child's direct exploration of the environment with minimal, if any, contribution from others (Kozulin, 1998; Karpov, 2006).

By contrast, Vygotsky places great emphasis on the role of the more knowledgeable other, and proposes the adult as a mediator of meaning. He maintains that since the tools to be transmitted are products of the human culture they need to be passed on to children by representatives of the culture (Karpov, 2005). One adequate example in support of the soundness of this argument comes from an L2 learning context where a mediator of

culturally and socially embedded meanings becomes fundamental. A representative of the culture becomes central because it is not just the words that are being transmitted but, more importantly, the force behind the words to endow children with an instrumental use of the language (Kozulin, 1998). In a similar vein, Lisle (2006) differentiates between the parroting of a label and meaning acquisition, i.e. surface and deep learning. Thus, it appears to be essential that meaning be mediated (cultural bearings, social implications, interactive force) otherwise learners are left with a corresponding sign mapped onto their L1, a sign devoid of any instrumental value.

Bruner (1986) makes valuable additions to the argument about the role of mediated learning and advocates that there is a qualitative difference between learning based on direct exposure to stimuli and learning 'vicariously', i.e. through other's experiences. Whereas Bruner remains undoubtedly one of the leading scholarly voices in support of the socio-cognitive unity, it would seem appropriate to mention here that the notion of social learning modelling originates with the psychologist Albert Bandura (1962). Moreover, the potential of human mediation is also strongly advocated by the Israeli clinician Reuven Feuerstein (1990). He holds the view that children's cognitive structures are infinitely modifiable as opposed to fixed intelligence, and that they will fulfil their true potential depending on the levels of contingency offered to them during mediated learning. This is saying that each individual holds learning potential which can be unlocked, explored and expanded through the help of the more experienced others (also see Howard and Coulter, 1991; Karpov, 2005; Kozulin, 1998). In summary, a more initiated mediator intentionally directs children's attention towards certain stimuli, i.e. amplifies or minimises, interprets objects and processes to the child, thus radically changing the conditions of the learning interaction (Feuerstein, 1990; Kozulin and Presseisen, 1995).

If a purely socio-cultural framework will emphasize the beneficial effects of the more knowledgeable adult on a child's cognitive ability (Hogan and Tudge, 1999), a more constructivist take will also look into the possibility of comparable beneficial effects from interactions between partners of similar learning ability. Thus under a socio-constructive perspective two main types of mediation profile: expert scaffolding and peer collaborative learning.

Initially researched in the context of mother-child interaction, the concept of supported and guided learning was further developed and coined as

'scaffolding' by Bruner (1975) and then by Wood, Bruner, and Ross (1976). The metaphor of scaffolding initially referred to one–to–one tutoring situations wherein a tutor provides comprehensible input to the novice learner with the aim of facilitating progress through the zone of proximal development (Bruner, 1986; Wood and Wood, 1996; Wood, 2002). A wealth of studies which employ the concept of scaffolding highlight the expert-novice interaction as a key factor in fostering cognitive growth (Campione *et al*., 1984; Clay & Cazden, 1990; Newman & Roskos, 1992; and Rogoff & Gardner, 1984 all *cited in* Dorn, 1996); with some focusing on the moves of the more knowledgeable other (Anghileri, 2006; Perret-Clermont *et al*., 2004).

For instance, Wood, Bruner and Ross (1976) propose six types of scaffolding functions: recruiting the learner's interest, simplifying the task, highlighting its relevant features, maintaining motivation, controlling the learner's frustration, and modelling. Their scaffolding concept is about striking a balance between modelling and re-construction (Fosnot and Perry, 2005). In a similar way, Wells (2002:14) describes five levels of contingent support for learning which are: general verbal intervention, specific verbal intervention, specific verbal intervention plus non-verbal indicators, preparation for the next action, and demonstration of action. Both of these models of scaffolding come from advancing constructivist elements in a broader socio-cultural frame (Cambourne, 1988).

In addition, Hobsbaum *et al*. (1996) propose incidental (on-the-spot building on the child's needs) and strategic scaffolding (planned deliberate teaching of strategy use that will enable the child). Furthermore, Pawan (2008) introduces socio-cultural, conceptual and linguistic scaffolding based on a study undertaken with students involved in an integrative type of curriculum where both language and content count equally.

Scaffolding becomes a matter of judging how much and when support is needed (Child, 2004) not only as part of the teacher's prior class planning but also, and perhaps more importantly, in response to students' ongoing elicitation for knowledge. Alexander (2004) captures the nature of this on-the-spot support for learning or responsive scaffolding when he argues that it is pointless to present children with complex questions and allow them ample wait time to answer. He advises that teachers should engage with students' answers, and hence with the understanding or misunderstanding that those answers reveal. This standpoint advocates the idea of teaching as

intervention, which is rooted on the very principle of assisted learning rather than mere facilitation.

Focusing on scaffolding as ongoing teaching assistance, Wood (1988) and Wood *et al*. (1978) describe it as contingent teaching, and argue that it provides help conditional upon the child's understanding of previous levels of instruction. Contingent teaching paces the amount of help children are given on the basis of their moment-to-moment understanding, it helps children to construct local expertise, and as a result children can achieve what they cannot achieve unassisted (Wood, Bruner and Ross , 1976).

Inspired by the positive results of using scaffolded instruction on one-to-one interactions, Bloom (1984) proposes a true challenge for the mainstream education, namely to attempt to design scaffolding strategies that can be implemented on the large scale of mainstream education but which give the same learning gains that individual tutoring appears to produce. In a similar vein, Tharp and Gallimore (1988) advocate for the relevance of scaffolding strategies to enter the classroom, and propose that teaching should be redefined as 'assisted performance'. Brown and Ferrara (1985) also expand the metaphor of scaffolding beyond the dyadic interaction into the community setting of the classroom and advance the concept of multiple ZPDs which in the classroom reality are operating simultaneously.

In the light of the classroom context, it seems to me that it would make sense to take the notion of scaffolding away from the rather rigid conceptualization of a one-way linear process wherein support is constructed and offered by the scaffolder and then gradually withdrawn as the child progresses. This study embraces a more flexible model of scaffolding as a dynamic interplay between all involved where the boundaries between the novice and the expert become blurred (Newman *et al*., 1989; Cumming-Potvins *et al*. 2003). The design of the CLIL module on which the observed classroom practice is based, draws heavily on the notions of sensitive teaching (Alexander, 2004), and contingent support (Wood, 1988; Wells, 2002).

II.2.2.2 Collaborative learning

Enthusiast followers of the adult mediated activity over peer mediated learning, put forth a number of studies in which they expose the weaknesses of learning interactions on the same cognitive level, deeming them as unproductive under certain conditions (Levin and Druyan, 1993; Rosenthal and Zimmerman, 1978; Tudge, 1989, 1992; Tudge and Winterhoff, 1993); or even showing no improvement during collaborative problem solving (Perret-Clermont, 1980; Doise and Mugny, 1984, Russell, 1982). However, there has been increasing recognition that peer-assisted learning exercises engender cognitive growth: when one child is more advanced (Chapman and McBride, 1992; Tudge, 1992, Tudge *et al*., 1996); and also when peers' strengths lie in different areas of expertise and therefore are able to take on different roles during dialogue mediated learning (Mercer, 2004; Mercer and Littleton, 2007; Mercer and Dawes, 2008).

The growing interest in making scaffolding part of the classroom landscape has also resulted in a reconsideration of the role of the novice alongside the role of the 'more knowledgeable other'. An MKO in a purely Vygotskian acceptation would normally be an adult with a quantitatively and qualitatively superior accumulation of knowledge and skills. However, the appearance of theories such as Gardner's multiple intelligence (1985) redefines peers as holders of different types of knowledge and sets of skills, which extends the notion of a cognitively potent learning partnership beyond the child–adult dyad. In addition, Shayer points out peers' ability to generate a 'collective ZPD from which a child can draw as from a collective pool' (2003:472).

There are scholars who take a broader understanding of scaffolding and extend it to describe peer interactions as well as adult peer interactions (Anton and DiCamilla, 1999), with other observers insisting on a rigorous separation between expert tutoring (scaffolding or help offered by an expert) and peer tutoring (collaborative learning or problem solving) (Wells, 1999b).

In agreement with Wells, Karpov (2005) takes issue with the legitimacy of the Vygotskian foundations claimed by approaches such as guided discovery learning (Brown and Campione, 1994) and reciprocal teaching (Palincsar and Brown 1984). These approaches reconceptualise the zone of proximal development as a developmental space which can be inhabited not only by the child-adult dyad but a space where growth occurs also through the

interaction with peers and artefacts. It is the acceptance of peers as scaffolders which Karpov (*ibid*) feels undermines the very tenet of Vygotsky's theory of mediation which holds the adult as the knowledgeable mediator.

Leaving aside the terminological battles, it should be noted that there is a growing community of scholars who suggest that efficient learning support comes not only from expert tutors. On a more specific note, benefits have been documented to come from unskilled tutors (Graesser *et al*., 1998; Ko *et al*., 2003) as well as in the form of reciprocal teaching from peers (Tudge, 1990; Rosenshine and Meister, 1994) with effectiveness comparable to that offered through expert tutoring. Collaborative learning and peer tutoring has been reported particularly successful in L2 research (Donato, 1994; DeGuerrero and Villamil, 2001; Eschevarria *et al*., 2008).

There appears to be truth in what both camps ascertain; any type of interaction, adult-child and child-child, is fertile ground for cognitive development. On one hand, peer interaction leads to an acknowledgement of each other's ideas and 'launches expansive cycles of collaboration that are so crucial for the growth of cognition' (Arievitch, 2004:192 *cited in* Karpov, 2006). On the other hand, it would be safe to argue, complementarily, that the adult–child interactions are those where the advanced cultural tools are likely to be introduced with a view to promoting cognitive growth.

There has been a major shift in recognising the value of any human interaction: from Piaget's child who 'struggles single-handedly to strike some equilibrium between assimilating the world to himself or himself to the world' (Bruner, 1985:25) to a view of a cogitating child for whom peers are not merely an external object. This recognition of the value of peer assisted work informed decisions made in this study regarding the learning arrangement encouraged. The relationship between the teacher and the learner is regarded as mutually dependent, and the process of learning is seen as governed by contributions of equal standing from all parties involved (Rogoff, 1995; Hogan & Pressley, 1997). In summary, this study is influenced by current research which highlights positive outcomes of both adult and peer assisted learning (Karpov, 2005).

II.2.3 Language as a thinking tool

The previous sub-section discusses the value of adult guided learning and peer collaboration in more general terms, i.e. drawing on research on problem solving, specific psychological functions, or particular learning conditions. This part focuses on the role of dialogicality in learning interactions (with others and tasks) and emphasizes a cognitive function of language.

II.2.3.1 The cognitive dimension of dialogic learning

During the evolutionary course of humankind, besides the ancient psychological tools which Vygotsky mentions such as 'casting lots, tying knots, and counting fingers' (1978:127), humankind has come to master a higher order set of symbolic mediators of which some examples are: natural and artificial languages, discourses, and cultural-symbolic systems of different eras and nations Kozulin (1998).

Vygotsky (1981) maintains that of all the psychological tools, what makes humans unique is their ability to communicate amongst themselves by employing a complex system of signs, in a way that is meaningful to them and others. Moreover, it is verbal thought in particular, that distinguishes humans from other animals. As far as the Vygotskian theory goes, the human mediator appears first and foremost as a carrier of signs, symbols and meanings, and thus adults become vehicles of symbolic tools (Kozulin and Presseisen, 1995). In other words, the links between us and our worlds are linguistically mediated by others and ourselves which implies that 'the external world is never directly apprehended but recast and deferred' (Frawley, 1997:96). It follows, then, that to a great extent, children's cognitive development boils down to the mastery of symbolic mediators, i.e. the children's ability to 'appropriate' and 'internalise' them (Luria, 1982; Kozulin, 1998); in Yngling's words (1994) 'we talk ourselves into development'.

This conceptualisation of language and thought as inherent to each other represents the cornerstone of Vygotsky's theory and emulates a liberationist view of cognitive growth. For Vygotsky mental life is shaped in the course of the interactions with others. The results of these interactions become internalised as meanings and forms, and thus 'the mind becomes equipped

with a tool, a linguistic one which is able to free or go beyond being a mere slave of the prevailing cultural order' (Bruner, 1997:68).

Vygotsky's (1978) seminal work (continued by Luria, 1982) contemplated the centrality of language, more precisely the claim that language pervades psychological functions, i.e. higher mental processes are shaped on the basis of speech activity. This theory has emulated a prolific flow of studies in which scholars seem to be divided between those who regard language and cognition as two separate psychological functions, and those who propose that cognition is linguistically determined. In simple terms, for both antagonistic groups the bottom line question is whether people need thoughts to understand what language means, or whether people need language to organise and make sense of their own thoughts.

At one extreme, some contemporary neuropsychologists would not accept the argument that language is central to the genesis of cerebral organisation and make the observation that many cognitive functions (visual perception of complex figures, for instance) can proceed concurrently with severe impairment of comprehension of verbal material (McCarthy and Warrington, 1990). From an anthropological perspective, Donald (1991 *cited in* Bermudez, 2003) argues that the social integration and coordination activity of pre-linguistic hominids resulted in fairly sophisticated forms of social cognition in the early communities. This is regarded as a precondition of the emergence of language and not a consequence of that emergence.

In between there is a restricted version of sententialism which proposes that while our conscious propositional thoughts are natural language sentences not our entire cognition is linguistic. For instance, in a mixed empirical and introspective study, undertaken with subjects bearing no mental illness, Hurlburt (1990, 1993) notes that more than half of the subjects reported inner speech on more than half of the occasions. Nevertheless, the subjects reported also emotions, visual images, and simply wordless thoughts.

At the other extreme, Vygotsky argues that once the link between language and thought is created around the age of two, then language supports cognitive growth '...at a certain point, these lines meet, whereupon thought becomes verbal and speech rational' (Vygotsky, 1962:44). Based on (Van der Veer and Valsiner 1991:265), Frawley develops further an explanation of the exact nature of the relation between thought and language in terms of determinacy:

> *'Language equals thought no more than a vehicle equals transportation. Linguistic mediation of higher thought makes speech a go between, not a reductive substitute. Vygotsky frequently notes that words do not equal concepts but instead steer towards them; thus, words mediate and complete thinking but do not express it […]. Speech becomes a tool for higher thought, a tool at the speaker's disposal'.*
> Frawaley (1997:96)

Following from Vygotsky's view, a strong version of sententialism rests on the claim that the existence of inner speech with its introspective nature shows that thought is linguistically determined (a view also endorsed in the classic work of Sapir, 1985 & Whorf, 1956). A wealth of recent studies depict cognitive development and functioning as largely linguistically constituted (Wertsch, 1990; Ahmed, 1994; Frawley, 1997) and advocate that thinking and speaking form a dialectical unity (Wertsch, 2007). Nevertheless, some authors insist that explicit speech mechanisms are not intrinsic to the exercising of all intellectual faculties, but that the organising power of speech as a form of communicative activity influences the way the brain sets up the information processing functions (Harre and Gillett, 1994).

The present study acknowledges the thesis of non-linguistic thought and recognises the existence of non-verbal layers of discourse, but it inclines more to a view of language as the most important system of cognitive representation which is involved in the mediation of the basic processes such as perception and attention, but also in more complex cognitive processes such as hypothesizing and even emotion (Bruner, 1964). In other words, while the notion of multimodal learning (Kress *et al.*, 2001) remains relevant to this study, the investigation still maintains as central the role of dialogicality in the development of cognition.

Under the dichotomy suggested by the Vygotskian account of inter- and intra-psychological planes, external speech, i.e. addressed to others, is viewed as outbound in that it transforms thought into words, and inner speech is regarded as coming from outside to within, which indicates a process of absorbing speech into thought (Ushakova, 1994). Based on his work, two main functions of language have been suggested, a communicative and a psychological one, i.e. language as a cultural tool (people use for sharing and developing knowledge) and as a cognitive tool (for organising our individual thoughts and articulating thinking in conjunction with others) (Luria, 1982). Wertsch (2007:17) captures well the cognitive value of language by arguing

that 'sign based mediation does not give just a quantitative improvement in that it confers speed and efficiency but it gives rise to a qualitative transformation in the thinking processes' and notes a growing interest in the substance of talk, i.e. in tracking the intellectual activity of the dialogue which has emerged from dialogically constituted learning interactions.

The current study does not attach a solely communicative function to external speech (the dialogue with others), i.e. does not conceptualise it as a mere conversational device devoid of any cognitive value. Rather, for present proposes the cognitive (intellectual) function of language is unpicked in both thinking-through-conversing-with-others (inter-thinking, Mercer, 2000) and, to some extent, in thinking-with-the-self in the form of private speech and inner speech (intra-thinking, Lantolf and Frawley, 1988; Lantolf, 2003). Thus, the cognitive function is conceptualised here as a dimension that transcends both intra- and inter- psychological planes by gliding across overlapping individual and social spaces.

In brief, in what follows the focus is on how children make use of dialogue to advance their own thinking and to provide support for others.

II.2.3.2 The dialogue with others

Dialogic learning is a powerful theoretical construct which draws on classic works coming from Vygotsky and Bakhtin (Dentith, 1995) but which is also firmly grounded in classroom reality. Wells (2002:5) aptly notes that 'learning [...] needs to be seen as essentially an enterprise of enquiry that is dialogically co-constructed'.

If one defines communication as a simple conveyance of information, then one needs to remain cautious about equating dialogue and communication. From this perspective dialogue rises from the status of a mere medium of transference of information and becomes a forum for on-line reflection and thinking in conjuncture with others. It follows then that what secures quality to any stretch of dialogue is in great part the usage of language as a cognitive tool kit (Wells, 1999a; 2001a&b).

The literature reveals a plethora of working theoretical constructs around dialogically embedded thinking. Some of the studies bring to the fore the value of the teacher assisted (scaffolded) dialogues: 'instructional

conversations' Gallimore and Tharp (1990); 'dialogic enquiry' Wells (1999a); 'responsive teaching' (Alexander, 2004); and, 'dialogic scaffolding' (Rojas-Drummond and Mercer, 2004). Other studies highlight the value of those learning conversations generated through collaborative group work: 'learning conversations' (Roehler *et al*., 1996); and, 'dialogic spells' (Nystrand *et al*., 2003).

Neil Mercer has written a great deal about an on-going negotiation of meaning as on-line linguistically articulated thinking in the course of interacting with others (Mercer, 1995, 2000, 2004, 2007, 2008a&b, 2009; Mercer and Littleton, 2007; Mercer and Dawes, 2008). Thus unlike the trend within the communicative approach in SLA, where interaction was geared more towards supporting the flow of the linguistic exchange with fluency as a desirable outcome, Mercer (2000), in an L1 mediated learning context, emphasizes the intellectual value of this interactive negotiation of meaning, i.e. shifts the focus on the substance of the dialogue.

He takes seriously the idea of the cognitive spark occurring at the meeting of minds and proposes the concept of inter-mental development zone (henceforth IDZ) whereby participants in a dialogic learning exchange 'remain mutually attuned' (2007:21) into each other's thinking and engage in a joint work on understanding. The notion of socio-cognitive conflict remains central in Mercer's reinterpretation of ZPD, only that he acknowledges that in classroom reality this does not occur as a result of manipulating different variables around one individual; rather socio-cognitive conflict arises from the flow of thoughts between individuals, the verbalisation of these thoughts and their transformation in the process of this verbalisation.

With a primary focus on the substance of the dialogic learning interaction, and acknowledging the ground-breaking work of Barnes and Todd (1995), Mercer (1995) proposes three relatively broad but enduring categories of classroom talk: exploratory, cumulative and disputational. He notes that the last two types are fairly common in classroom practice but that exploratory talk which encapsulates the students' ability to *interthink* is not so frequently witnessed.

Exploratory talk bears a solid cognitive value (Barnes, 1991) and is characterised by active participation on the part of most members of the group whereby 'knowledge is made more publicly accountable and reasoning becomes more visible in the talk' (Mercer and Littleton, 2007:50). Barnes (2008:5) argues that it is 'the flexibility of [this type of exploratory] speech

[that] makes it easy for us to find out new ways of arranging what we know' Exploratory dialogic exchanges may, at a first glance, look hesitant incomplete but, in fact, they represent talk through which children articulate and manage on-line their own thinking, and through which they attempt to think analytically together with peers. Mercer and Dawes (2008) liken exploratory talk to think alouds: while during think aloud protocols individuals reason by themselves assisted by language and prompted by tasks, through explorative talk collaborative reasoning arises and partially formed ideas grow as a result of this dialogic interaction. Empirical evidence suggests that scores of individual reasoning tests increase significantly as a result of encouraging children to use exploratory type of talk (Wegerif *et al.,* 1999).

In agreement with Swann (2009), Mercer (2009) advises that the exploratory type of dialogue should be regarded as a valuable overall tool for learning because it involves joint analysis and critical evaluation of ideas and thus fosters a capability for argumentation. Mercer (*ibidem*) regards exploratory talk not only as a medium for critical thinking but also as a desirable tool to master in order to participate in educated communities of discourse. In addition to this, he notes exploratory talk as a means of organising interaction to ensure fairness in collaborative work which seems to suggest that this kind of talk has a role in the management–of-the-learning process.

The idea of dialogue as a cognitive tool is also supported by Anderson and colleagues (1998 *cited in* Mercer and Littleton, 2007:63-64) who propose 'collaborative reasoning', and Resnick (1999 *cited in* Mercer and Littleton, 2007:63) who identifies 'accountable talk' as a type of dialogic contribution which not only comes in response to other contributions but are linked or predicated on these. Irrespective of the different labels attached, similar principles seem to underpin the cognitively potent dialogic exchanges:

- They involve both constructive conflict and sharing of ideas in the pursuit of rational consensus;
- They generate ideas that are accountable, and are based on adequate and relevant arguments;
- They indicate respect for each other's contributions.

(Based on Mercer and Dawes, 2008 and Barnes, 2008)

Cumulative talk is characterised by repetitions and confirmations through which children build a body of knowledge by accumulation but without challenging one another's views. According to Mercer and Littleton (2007), this type of talk is quite common in classroom discourse and is generated mainly through co-operative work. This means that there is an atmosphere of trust and solidarity that characterises the interaction but the intellectual interaction is of a somewhat lesser value than in the explorative exchanges. While the explorative talk is indicative of criticality (proposals are challenged and discussed), cumulative talk shows students gathering information without questioning this or seeking to network this information.

Finally, *disputational talk* displays no knowledge construction, represents disagreement and comes in the form of short exchanges (usually unsupported challenges or counter-challenges) which are likely to lead to dyad or group breakdown (Mercer and Littleton, 2007). Learning interactions of a disputational nature consist mostly of assertions, commands, unproductive questions and answers. The students tend to be defensive and competitive in that they parade knowledge rather than share it with peers. If any arguments profile, they are not substantiated and usually occur in a very simplistic linguistic form (e.g. 'yes it is'/ 'it so is not'). Mercer claims that disputational talk displays high levels of interaction and that this may host some reasoning, only that this thinking exercise is an 'individualised and tacit' one (Mercer and Littleton 2007:61). This appears to make sense if one assumes that the sources of disagreement are being mulled over by the group members whilst still engaged in brief contradictory verbal exchanges. However, associating this more individualised and tacit reasoning with the disputational mode begs the question of whether this kind of thinking is suggested to be of a lesser value than 'interthinking', or whether what is being suggested is that even a more disputational mode can trigger cognitively valuable activity.

Historically, work on classroom talk has described learning dialogues as comprising a mix of rhetorical or argumentative patterns, IRF sequences, and spells of accumulation of ideas, all of which occur under a balance of student-led and teacher-directed activity (Edwards, 1993; Golding, 2011). I concur with Mercer's view on the need for a flexible and accommodating frame for analysing dialogue so as the naturalness of the dialogic interaction can be preserved. Thus these three archetypal forms of classroom talk (Mercer, 2004) are going to guide the organisation of classroom interactive-dialogic data this study.

II.2.3.3 The dialogue with the self

Work on understanding does not occur only in the form of conversing with others; private speech and inner speech can play a similarly significant role.

Children start their early exploration through non-verbal communication, and it is only later that this is replaced by the use of language (Vygotsky 1934/1986). Mothers label objects and actions of immediate relevance for children thus supplying the child not with mere labels for things but with a tool for self–regulation. Children start talking aloud and employ this self-addressed speech for instance to overcome a temptation to do something inappropriate. This egocentric speech (private speech), which Piaget believed to be a mere accompaniment of children's activity without playing a major part, Vygostky, by contrast, regarded as 'serving mental orientation, conscious understanding; and […] overcoming of difficulties' (Vygotsky, 1934/1986 *cited in* Karpov, 2005:30).

Vygotsky (1978) identifies three stages of language development: external speech (social) up to 3 years old; private speech (3 to 7) and inner speech from 7 years old onwards**.** He argues that egocentric speech does not disappear but it turns into inner speech or verbal thinking, and it serves a planning and self-regulating function in thinking, especially when stimulated by problems or frustrations.

Luria (1994) reinforces messages coming from Vygotsky's experiments regarding the children's tendency to orient their actions outward. There is an inclination to ask for help, i.e. to seek assistance from an MKO. However, if no help is provided and children have to face the analysis of a problem by themselves, then they seem to summon a more private type of speech and use it as a tool or companion to support them through their reasoning exercise. One of Vygotsky's experiments (1934) consisted of presenting 3 to 5 year old participants with simple concrete tasks during which the experimenter introduced an impediment which made it harder for the child to accomplish the task. Vygotsky's observation was then that once these children were faced with a higher degree of difficulty they moved into the verbal sphere whereby the tendency was to verbalise aspects of the encountered difficulty. Based on Vygotsky's original observation, Luria lays out the stages of this verbal engagement as follows: firstly, children tend to describe the setting, then they identify the difficulty, after which they attempt to articulate a plan for a possible solution (Vygotsky and Luria, 1994).

At the risk of oversimplification, inner speech can be described as sentences heard in the head (Machery, 2005). It is easily distinguishable from speech intended towards others because of its introspective nature and also for being different in structure (much abbreviated with a purely predicative character).

One aspect of interest here is to the role of L1 in the form of inner speech particularly for limited L2 proficiency students. It was on grounds of the disregard for the L1 supporting potential in the process of internalisation that the communicative approach was in part challenged (Lucas and Katz, 1994). Both DeGuerrero (2005) and Ushakova (1994) note that despite indisputable evidence of the crucial role of inner speech as revealed by L1 research, inner speech research in L2 is not sufficient. They maintain that L1 private speech is present in many covert L2 processes, and thus responsible for much of the internalisation that occurs. More specifically, Ushakova (1994:136) argues that L2 acquisition takes place in the form of 'plugging into the L1 inner speech mechanisms', which explains why the influence of L1 can rarely, if ever, be eliminated. In addition, the centrality of L1 as a cognitive tool is also considerably supported by evidence from research into content-oriented and task-based instructional models (Anton and DiCamilla, 1999; Centeno-Cortés and Jiménez-Jiménez, 2004; Eschevarria *et al.*, 2008; Coonan, 2007).

Private speech although audible is not intentionally directed towards a second party but to the self, and does not always take the form of quiet whispering. This is the point where the more private cognitive space opens up and more or less as a result of conscious action children begin to reason in conjunction with others. Frawley (1997) describes private speech as abbreviated to a certain extent, overtly self-directed, task-relevant, and pre-actional; in other words, under certain circumstances such as increased task difficulty children tend to broadcast their own reasoning.

Galperin and other Vygotskian followers have developed the idea that inner speech and private speech play a role in organising the complex type of activity which Galperin referred to as 'cognitive action' (1957, 1966 *cited in* Luria 1982:106). This implies that speech is the instrument that makes it possible to summon and organise other cognitive functions in order to solve problems mentally. Frawley also notes that 'private speech does not equal thought but is a symptom of it' (1997:185); that is to say that private speech is dedicated to self-management and is not a live broadcasting of those more covert thought processes. Analysis of concurrent speech during problem

solving shows that private speech has an inhibitory function in that it rules out options and gives direction to representational thought, and therefore fulfils a control function (Frawley, 1997).

Somewhere on the continuum between 'private speech' and 'inner speech' social dialogue turns into a private dialogue for thinking. Inner speech is a major cognitive instrument, part of processes such as analytic reasoning and evaluative moves, whilst private speech functions metacognitively in that it organises the course of a learning action (Frawley, 1997). Private speech, and reports on inner speech seem to give proof that people are capable of mediating their own learning: 'language in Vygotsky's sense is a way of sorting out one's thoughts about things Wertsch (1985:23).' They can both be regarded as language for thought; a language which permeates everyday classroom-based learning dialogues which, in their turn, are simultaneously private and public (Frawley, 1997).

In the light of the above presented, internalisation previously mentioned under the Piagetian and Vygotskian learning mechanisms (II.1.1.3.2) can be regarded as a succession of cycles of inter- and intra- thinking, a mainly dialogically driven phenomenon shaped at the interface between the inter-and intra- cognitive planes. Thus, internalisation occurs as a result of successive cycles of inward and outward dialogic journeys. Blonskij defines the very dialogical nature of the dialogue itself: 'two partners speak at the same time except that one speaks aloud and the other speaks to the self. To speak here means to think aloud, and to listen means to think to oneself' (1935:291).

It can therefore be summarised that peer-oriented dialogue and spells of more private speech become unified cognitive activity (Wells, 1999a; Wertsch, 1991, 1995). The theoretical boundary between social vs. individual spaces remains a metaphor, and as any dichotomy it is fraught with the dangers of oversimplification. It is precisely this phenomenon of spiralling internalisation-externalisation as a dialogically constituted mechanism (Wertsch, 1979) that challenges the initial theoretical distinction Vygotsky proposes. Rather, it is proposed here that the dialogically driven interplay of internalisation-externalisation creates a fluid cognitive space.

II.2.4 A discourse approach to cognition

As shown in previous sub-sections, a socio-constructivist perspective considers the relations between cognition and knowledge, and frames learning as a discourse mediated phenomenon. In its turn, a discourse approach to learning has the accommodating capacity to capture the linguistic, the interactional and the cognitive dimensions into one unit of analysis (VanDijk, 1997). This section follows the lead of those more humanistic trends in psychology which:

- Criticise the idea of meaning residing in the mind as an enclosed space;
- Theorise about mind as the interface of various discourses; accept *cognition* as a subjective entity;
- Warn about the impossibility of a *content-blind* or *context-free* psychology; and
- Advocate triangulation of perspectives between strands such as discursive psychology, ethnomethodology and conversation analysis.

(Based on Perret-Clermont *et al*., 1991; Potter, 2001; Paltridge, 2006; and Van Dijk, 2008)

It may be worth, at this point, a reminder that the term cognitive here is defined as relating to thought and not to brain processes in the more traditional acceptation. More precisely, it refers to thinking activity that is characterised by intentionality, directionality, consciousness, privacy, continuity, and selectivity (based on the philosopher Franz Brentano's five properties of thought *cited in* Frawley, 1997 but also discussed and elaborated further by Molder and Potter, 2005).

The three main elements on which a discourse perspective usually rests are text/talk, context and actors. More traditionally it is either the linguistic component (text/talk) or the out-there social elements (context factors) which are examined for their influence. However, post-cognitivist trends in psychology seem to have opened to the idea of transcending rigid paradigms. Thus, discourse objects are conceptualised as both social and psychological phenomena in that there is now wide recognition for the context-embeddedness of thinking; there is now a fairly established acceptation of thinking arising in learning interactions; and finally, there exists an increasing acceptation of the role of interpretation by actors in discourse comprehension (Potter, 2000, 2006; Potter and Edwards, 2003; Edwards *et al.*, 2009; Coulter, 2005; Molder and Potter, 2005; Van Dijk, 1997, 2008).

II.2.4.1 A socio-cognitive reading of 'context'

From a discourse perspective, it may be safe to argue that context pervades text/talk and learning interactions. Van Dijk (2008) makes the observation that most descriptions of discourse start from text /talk and co-text and only later they move on to the relevance of context. He goes on to note that the main point in any discourse-oriented account is the centrality of context. This subsection considers a couple of perspectives from which the role of the context in shaping up learning events can be discussed.

Contextual elements come to the fore when discourse is acknowledged as a multimodal medium of expression. There seems to be general agreement over discourse as including language, non-linguistic semiotic systems, non-verbal and non-vocal communication (Wetherell *et al.*, 2001). A discourse perspective on cognition is sensitive to the fact that the information which shapes up the mind incorporates linguistic as well as non-linguistic elements.

Furthermore, talk and text are not equated with language. Both written and spoken texts are brought to life through the underlying assumptions behind the words and the values attached to them (Harre and Gillett, 1994; Paltridge, 2006). This idea can be traced back to Vygotsky himself who theorises that a word is a 'micro-cosmos of human consciousness' (1978:36). In other words, discourse does not convey meaning exclusively through linguistic structures; rather meaning making under a discourse perspective bears the mark of wider contextual layers such as culture and community.

Discourse also draws upon speech accompanying gestures, for instance, such as iconic, representational, conventional and deictic gestures (McNeill, 2005). These can communicate attitudes and emotions voluntarily and involuntarily, may facilitate some aspects of memory or even provide some insight into a speaker's mental representations (Rickheit and Sichelschmidt, 1999). In addition, discourse allows a conceptualisation of visuals in terms of meaning structures; for instance, an image can be held together more so by its meaning-structure than by its pictorial elements (Pylyshyn, 1979 *cited in* Harre and Gillett, 1994). Thus, it can be summed up that the textual part of an incoming verbal message is supplemented by prior knowledge structures as well as information conveyed through the non-verbal elements, both of whose major role is acknowledged under a discourse perspective.

Another way of looking at context would be as ever widening, concentrically arranged layers of context; from narrower ones relating to the individual-in-social-action (personality traits, learner style preference, learning strategies, family influence); to tightly localised ones around a micro-culture (roles assumed in the learning community, learning arrangements, learning modes, features of the immediate learning environment); to, finally, wider layers of context which relate to a socio-economic and historic background.

Localised at a micro level, Sanders (2005) illustrates a series of narrower layers of discourse which contribute to the shaping up of cognition. In doing so he acknowledges, to some extent, the individual in social interaction; nonetheless, he remains considerably closer to a more purist cognitive perspective than a social one. Thus, the layers he identifies are as follows: speaker's underlying inner states at the moment of manipulating or producing discourse objects (perceptions, emotions); then, more enduring cognitive content (beliefs, concepts, knowledge structures, values, memories), and finally, response bias (personality traits, habits, attitudes) to which one can add the processing algorithms.

Somewhat similar to the sociologic take on discourse, Van Dijk (2006a, 2008) also admits that the properties of the communicative situation arise through the contribution of several contextual layers (time, place, actions and goals). However, he places as central the individual's filtering of these layers, a process which is driven by the individual's characteristics, their set of beliefs and available personalised knowledge.

More precisely, Van Dijk (2008) argues that it is not so much the social situation and the social factors that influence the structure of talk and text; rather, discourse emerges as a result of a process of interpretation of these social encounters on the part of the participants. He goes on to explain that there are context models of the communicative situation (e.g. classroom debate or an interview) and a context model of the situation that is being talked about (e.g. Celtic huts or medieval castles). Following these examples, students would need to activate knowledge of the instructional discourse or conversational rules in order to participate in a class debate or an interview, in addition to activating knowledge of early human shelters or medieval architectural features with the aim of following the propositional information. Thus, children draw on various types of knowledge which they have or becomes available to them in order to shape the incoming discourse.

Besides the fact that different language users operate with different cognitive sets, he emphasizes that even an individual cognitive set is contextually variable, i.e. the language users may choose to activate different knowledge in different situations. This shows the significant implications of context at all levels of discourse. Van Dijk (2006a, 2008) argues relocation of the notion of context from the out-there real world onto the individuals' minds in the form of context mental models. The individual minds are not perceived as isolated non-interacting entities; rather the mind becomes the meeting point of several discourses. It can be summed up that under this socio-cognitive reading, context becomes a fluid concept, a subjective construct that plays a crucial role in the production and comprehension of discourse.

II.2.4.2 The centrality of interpretation in discourse comprehension

Individuals bring their uniqueness to any interaction; 'the role of persons as innovative carriers of the collective culture is crucial for the constant modification of the cultural form' (Valsiner and Litvinovic, 1996:61). From this perspective the individual's interpretation of tools and incoming discourse becomes nearly as important as the perspective of the socially and culturally appropriated tools and discourses. This means that even though young children may start by being apprenticed to their carers, they soon begin to mull over the discourses they are being exposed to and to use the tools made available to them in their own way. This, in time may lead to changes in discourses and alterations of the original tools. This mutual influence established a dialectic relation between the cultural heritage and the individual perception of it (Jawrosky and Coupland, 1999).

For instance, Meskill and Rangelova (2000) adhere to a distinction between a more personally attributed 'sense' and socially shared 'meaning' in discourse comprehension. They define 'sense' as the sum of all psychological events aroused in our consciousness through social discoursal activity, and note that sense can change in different situations and minds. By contrast, meaning is a zone of sense which becomes more stable and precise. Van Dijk agrees that people store socially accepted beliefs but he underlines that people amend and apply these beliefs 'in a personal and ad-hoc way' (2008:219). He proposes that people process discourse in relation to their personal cognitive sets (skills, goals, action, feelings, beliefs, attitudes, wants and types of knowledge). It is the *knowledge device* concept and the students'

interpretative activity during discourse processing that becomes of interest at this point as they appear to be useful theoretical constructs for the framing of the analysis in this project.

The *knowledge device* that Van Dijk (2008) proposes links to some extent with the more traditional 'top-down' processing discussed in cognitive psychology and linguistics. The types of knowledge students activate to comprehend incoming discourse can often provide a wider frame (prior knowledge of a topic, genre, or syntactic structure). This background knowledge (some of which can be shared with others, some of which can be more personalised) constitutes the frame within which decoding occurs, a frame which however can be altered in the course of discourse processing. This idea of balancing fitting in information with readjusting broader conceptual frames is largely reminiscent of the processes of assimilation and accommodation explained in the Piagetian account.

With regards to the 'top-down' type of processing, Allport (1983) argues that 'there can be no language understanding without a framework or some prior knowledge about the subject of discourse into which the new information can be integrated and from which missing information can be integrated' (*cited in* Harre and Gillett, 1994:55). If this processing happens more as an assimilative process, then discourse comprehension can be described as an expectation based process in that the knowledge frame to which people subscribe the incoming information sometimes overrides sense-directed processing (McCarthy and Warrington, 1990; Tannen, 1979 & Riesbeck and Schank 1978 *both cited in* Brown and Yule 1983).

Based on Piaget's pioneering work, it is proposed that what stands at the heart of the top-down type of processing are the theoretical constructs of mental models and schema. It is on the basis of these mental models and against the broader schema that incoming discourse is being processed.

Mental models can be briefly defined as schematic representations of our subjective beliefs. They have been invoked as powerful explanatory principle for comprehension processes at discourse level (McNamara *et.al*., 1991 *cited in* Rickheit and Sichelschmidt, 1999). It has been argued that mental models spring from an innate ability of the mind to construct models of reality (Johnson–Laird 1981, 1983; Anderson, 2010). In other words, they are hypothetical constructs that play a central role in representing objects, sates of affairs, sequences of events, social and psychological activities of daily life.

Mental models are characterised generally by the fact that they lay stress on: 'constructiveness' (construction and deconstruction of structural relationships that exist between outside entities), 'functionality' (mapping of the relations between internal and external structures), 'transcendence' (integration of both the information inherent in stimulus and the information inferred from knowledge), and 'goal-directness' (optimal integration of what is perceived with what is known)' (Rickheit and Sichelschmidt, 1999:22).

In short, schemata contain 'default values' or abstractions from certain instances that can later be used to make inferences about new instances (Anderson, 2010); in other words, they function as 'ideational scaffolding' (Anderson, 1982). They are higher–level complex knowledge structures (Van Dijk, 1997) which guide both information acceptance and information retrieval, and range from more concrete to more abstract ones (Hardy-Leahey and Jackson-Harris, 2001).

Following from the above briefly described mechanisms, discourse comprehension can be defined as a process of meaning assignment against existing schema but also as a process of on-going meaning construction through which mental models are summoned, put to work and constantly modified. Processing discourse which implies accessing, comprehending and inhabiting a text/talk, is not straightforward regurgitation. Instead the human mind sets into motion various types of cognitive representations which support the interpretation of the linguistic input. These cognitive representations can incorporate mental models, schema, rhetorical structures, and real or imaginary worlds.

Besides representations, comprehension is realised through a series of cognitive processes some of which may happen at imperceptible speed, whereas others may be the result of a deliberate and gradual activity (Van Dijk, 1997; Graesser *et al.*, 1997b). One such higher order cognitive process is drawing inferences with the aim of attaining textual coherence. This can be described as a systematic process of generating new information from already established mental models and schema; nevertheless, with a reorganising effect on the more established mental representations (Brown and Yule, 1983; Rickheit and Sichelschmidt, 1999).

Discourse processing can be regarded as an overall interpretative process; a view which can account for the transformations that occur in the representation of a text or of a communicative situation (Van Dijk, 1979).

Interpretation of text/talk, in particular, occurs at two semantic levels: a global and a local one. The former deals with interpretation of sentences and the establishment of coherence relations between sentences, whereas the latter relies on a semantic macrostructure which helps to establish the theme or the gist. Nevertheless, this is not to say that interpretation occurs in a linear fashion between the two levels (from analysing grammatical structures to syntactic rules and then on to meaningful way to put these structures together). Global and local semantic interpretation is an on-going (on line) tentative process which allows for continuous reinterpretation whereby bottom-up processes (word phrase decoding) is combined with top–down guesses about the expected structures of a stretch of conversation or a story.

In the light of the above discussion, discourse comprehension may sound solidly reliant on those 'in the head' mental representations and cognitive processes. However, Frawley (1997) advises that one should balance the ideas of socio-cultural understanding and computational comprehension. In a similar vein, but from a discursive psychology viewpoint, Potter and Wetherell (1987) note that a great deal of the vocabulary of mentalistic terms is used by people without an inner reference. They also bring into relief the idea that experiencing some sort of insight is not a sufficient condition for understanding and that others' reaction to one's expressed thoughts adds to an individual's work on understanding.

By looking at discourse comprehension in terms of interpretation, an idea reiterated throughout the entire chapter surfaces again, namely that meaning making is about acts of construction which are value laden (Jaworski and Coupland 1999). In short, a socio-cognitive stand, embraces the fact that in real time discourse comprehension is both individual interpretation and inter-subjective construction.

There seems to be agreement that a comprehensive theory of discourse needs to rise from a carefully balanced consideration of its key elements text/talk, actors and context. An exploration of diverse (not necessarily irreconcilably divergent) angles - social, psychological, or linguistic illustrates how different approaches yield variations in the conceptualisation of the same mathematical calculation (text/talk + actors + context). However, the gain of a socio-cognitive stand rests in exploiting these different angles in order to secure multiple perspectives on discourse which is in equal measures a social cognitive and linguistic affair (Van Dijk, 1979).

II.3 A SOCIO-CONSTRUCTIVIST THEORETICAL FRAMEWORK for LEARNING

Drawing on the discussions undertaken in the previous sections which reiterate a socio-constructivist approach to cognition and discourse, this final part proposes a theoretical framework which synthesises the most useful and informative theoretical constructs in light of the research focus of my study.

The diagram below is inspired by Bruner's advocacy for meaning making as a fundamental unit of analysis in understanding cognitive growth. It captures Bruner's argument that people construct their own worlds as part of their social interactive experiences, in addition to using an inherent 'set of predispositions to construe the social world [...] a form of meaning readiness' (1990:73). More specifically, my diagram depicts the learning event as a participatory and interpretive learning endeavour by corroborating three axes: the mode (horizontal axis), the medium (vertical axis), and the purpose of learning (spiralling diagonal axis).

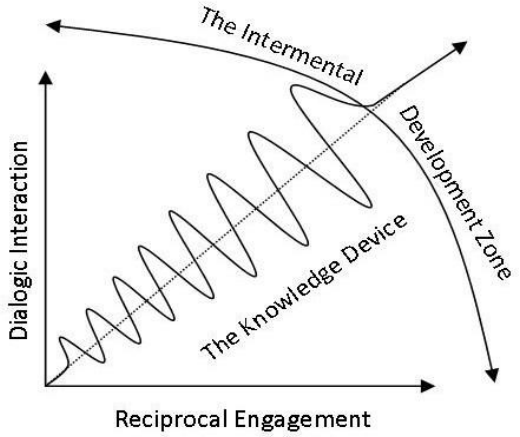

DIAGRAM 1: A Theoretical Framework for LEARNING as MEANING MAKING

With learning instances generated through classroom-based and interview-based tasks under investigative lenses in this study, *reciprocal engagement* emerges as a useful construct which I propose as an overarching concept for the *mode* axis to suggest a growing responsive disposition in children under any genuine learning opportunity.

This axis subsumes a cline from outward to more inward oriented learning occurrences, a cline along which children can maintain an active and reactive

stance whether they orientate to selves or others. This is to say that even when children engage in a more private learning exercise and orientate themselves to their own personal knowledge, the process of revisitation and possible restructuring of this knowledge implies a certain level of interaction. In this sense, it could be argued that there is a reciprocal engagement between the current and past epistemic self, i.e. the current and past body of knowledge at the child's disposal.

The axis also encompasses collaborative engagement, i.e. it encapsulates both scaffolded instruction (Wood, Bruner & Ross, 1976) and peer-assisted work (Tudge, Winterhoff & Hogan, 1996), which involves interactions with MKOs as well as peers. I do not necessarily conceptualise this as a neat dichotomy or two ends of a cline, and do not always equate MKOs with the expert role and peers with the novice role. In the reality of complex learning settings, both roles of expert and novice can be assumed by peers when working alone, the role of novice can at times be assumed by the tutor, as it is possible for one child to assume expert or novice role in different learning situations. It follows then that collaboration arises through interactions between teachers and students but not only. In the same way in which the current and past selves of one individual can connect and interact, the different roles one assumes can come together and confer more than the sum of different facets of one's identity as a learner.

Two main constructs from the literature underpin this dimension: apprenticeship and agency. The complementarity between these two and their subtle interplay draws attention to the unity between the social and the individual, and paves the way for constructs such as *reciprocal engagement* which can comfortably reside at the interface between private and public.

The study also carries a great interest in the *medium* of learning; here L2 mediated learning is primarily of interest, although the reality of the classroom learning noted in this study raises the profile of L1 as a cognitive tool. Thus, central for this axis is the notion of *dialogic interaction* (Wells, 1999; Mercer & Hodgkinson, 2007). Although dialogicality is foregrounded, the axis does not mean to represent language per se. Children's dialogues go beyond mere use of language; the force and the instrumentality of the language employed in conversations shows that they draw on various discourses. In addition to this it needs to be reiterated that although dialogue

remains the primary medium for learning, multimodality especially in CLIL learning has to be acknowledged.

This axis also draws on ideas from the literature which propose language as a tool for thinking and not a mere means of communication. Thus dialogue here works on two planes: dialogic exchanges serve the purpose of carrying information but they can also become a medium for thinking; further, dialogue can enable individuals to think with others or selves. From this perspective, dialogic interactions of a cognitive value are likely to be an uneven mix of socially oriented speech and private speech. It would be useful to accept that thinking with others and to the self through dialogue is as an integrated process.

The space between the horizontal and vertical axes is the Intermental Development Zone (Mercer, 2000) which constitutes the catalytic soil on which the Knowledge Device (Van Dijk, 1997) is formed and transformed. Another metaphorical way of describing this would be to say that *the mode* and *the medium* generate an electric field which then powers the reorganisation of existing *knowledge* structures. In the midst of this field a *triptych* can be inferred, i.e. a coming together of three abstracted entities from the three axes: *engagement*, *dialogicality* and *knowledge*. Not only do these elements create this field of cognitive power but they do so by stimulating and enriching each other. A prompting comment from a peer or the MKO can trigger a desire to seek to understand further and revisit existing knowledge structures, and in this process the power of language to help an individual self-regulate is crucial. Which one is the initiating force at one time is perhaps less important; what counts is the quality they confer to the learning event.

The spiralling diagonal axis stands for *the purpose* of learning which, in this study, is the emergence and advancement of an individual's *knowledge device*; a concept borrowed from Van Dijk's work (1997). He discusses knowledge formation through the lenses of discourse processing whereby an individual's knowledge device is shaped through interpretation of newly encountered knowledge by individuals against their own cognitive sets (attitudes, feelings, personality traits and prior knowledge). The knowledge device is conceptualised in this study as encompassing different types of knowledge drawn from socially-shared bodies of knowledge, but which become personalised, are networked amongst themselves and maintain a

dynamic relationship with socially-constituted knowledge. I regard this personalised knowledge structures as unstable and amendable, i.e. open to further (de)constructions and (co)constructions which means that the knowledge device can be regarded as both origin and outcome of learning.

In my model the individual's knowledge device spirals through the intermental development zone and beyond this. By this I mean to suggest that an individual's bodies of knowledge are deconstructed and constructed as they progress through this field of human interaction. The shooting arrow suggests that an individual's level of ability transcends temporary intermental development spaces one may reside for a while. If the diagram above is taken as representing one learning instance, then one should picture myriads of such developmental sequences in a child's intellectual development.

In summary, learning here is conceptualised as active construction of knowledge through interactive participation and individual interpretation. Such a frame can enable a holistic analysis of naturally occurring learning events as most of the learning instances witnessed in classrooms are a complex mix of teacher input, student independent refection and peer oriented collaboration.

The literature chapter opened with a consideration of a more inclusive conceptualisation of learning which departs from a narrow realism and settles on a middle ground of moderate relativism. Then, an exploration of the cognitive-constructivist and socio-cultural strands has been undertaken with the aim of exploring views of internalisation, and also with a view to introducing those debates in the literature around the possible epistemological and ontological alignment between the two paradigms.

The internalist vs. externalist perspective followed throughout section II.1 (on a broader philosophical level) has also been followed in section II.2 but in relation to more specific theoretical notions. Thus, the second part offered as a frame for discussion a socio-constructivist canvas where the original concepts of Vygotskian and Piagetian inspiration step into the background in order to allow an in-depth exploration of more current theoretical constructs.

Finally, the third part has provided a theoretical framework which conceptualises learning as meaning making resting on three main dimensions: engagement, dialogicality, and knowledge. The proposed framework can also read as learning arising at the confluence of three conditions: mode, medium, and purpose, which lends this framework to pedagogical applications.

III: RESEARCHED CONTEXT

III.1 THE MESOLEVEL: THE IMMEDIATE LEARNING ENVIRONMENT

A brief account of the features of the broader context (macro-level) has been provided in the Introduction section of this thesis. This chapter focuses on the following two layers if context: the meso- and the micro-levels. In this sub-section I shall provides details about the actual setting and the participants involved in this study.

This project was undertaken in an urban school in one of the largest cities (approximately 350, 000 inhabitants) in the Moldova area. It needs to be noted from the onset that unlike in some of the western contexts such as the UK, where urban schools tend to be associated with disadvantaged or at risk social groups, in Romania urban schools, in great part, remain relatively privileged by comparison to the educational settings from the rural areas (Mincu, 2009).

My project is based on an eight week CLIL World History programme (on average 2 to 3 lessons / week). In addition to this, there have also been some lessons as part of the pilot work (two weeks) and as part of the follow-up field visit (one week). Set in a mainstream primary school, the study involves Y3 and Y4 students (9 and 10 year olds), both mixed ability and coming from a full range of social backgrounds. In terms of L1 literacy the students are slightly above the average urban student, while with regards to L2 proficiency levels, the majority of the students are at Level A1 on the Common European Framework.

In this particular educational setting, the CLIL approach has had mostly positive reactions from the school management, parents and the students involved. Whilst parents seem to support it with an understanding of it being a further opportunity for boost their children English language levels, the students seem to appreciate more the new content and the different angles of approaching some of the already familiar content.

III.1.1 The school ethos

This primary school is relatively small as it comprises approximately 150 students, and functions with approximately 20 students per class which is slightly under the mainstream average of 25. The main admission criteria are catchment area and the parents' affiliation to the university the school has financial ties with; a connection which explains the fact that the school is fairly well equipped with IT facilities and a variety of teachings aids.

The school functions between 8 and 4 with the obligatory curriculum being covered in lessons from 8 to 1, after which students have an hour lunch break and play time, followed by afternoon homework preparation and various clubs. For those children involved in the afternoon program, parents subsidise the cost of the school dinners and of the afternoon activities. Each class has a main primary teacher who covers most of the curricular areas but also specialist teachers for Arts, Music, Sports, IT, Religion, English and CLIL. All classes study EFL for 3 lessons a week involving training for Cambridge Young Learner Examinations. Mostly Y3 and Y4 benefit from CLIL infusions, in the EFL lessons most frequently, or from CLIL modules the school sets up over a term at a time with a number of one or even two lessons allocated per week.

The initiative to introduce CLIL modules alongside EFL in this school is a good example of a fairly successful integrated change model. In this particular case, an exploration of the CLIL approach is encouraged, in part, by the national educational policy but it is also possible due to the existence of adequately qualified and dedicated staff. Finally, this has also come to life due to the now existence of the school determined curriculum which gives teachers more freedom, in addition to allowing students and parents a voice. Unlike in the 1990s, when parents had almost no role in educational and school decisions (Georgesu, 1998; Bunescu *et al*., 1999 *cited in* Tobin, 2010), latterly, parents are given a chance for democratic participation in the education of their offspring. All implicated stakeholders largely agree to rely on the approved textbooks. However, these approved textbooks in spite of being the more competitive ones, are occasionally supplemented by materials from other textbooks considered more attractive, i.e. those which come as a package with CDs, posters, flash cards, board games, teacher's book, and tests with keys. This is common practice especially in those urban schools (either primary or secondary) with highly dedicated teaching staff and a fairly good level of parent support.

III.1.2 Participants' profiles

III.1.2.1 The students

Although in terms of facilities and staff commitment, the school can be classed as slightly above the average urban school, it is important to note that the children do not have to undertake any special selection examination. Similarly, in spite of its connections with one of the leading universities in the city, the children's parents do not represent only a certain social category; rather, there is a fairly even distribution of all the categories of employment which exist at the patron university.

With regard to the student's intellectual potential, the majority of the children can be classed as average primary-school urban students, with a few exceptional and only a few children with special needs. The students' work in L1 literacy is quite advanced (with a great deal of emphasis on genre- writing, oral exposition and grammatical knowledge). These students' results in L1 literacy tests are comparable with the literacy scores revealed by the PIRLS study for urban areas (see I.3.3).

With regard to their L2 proficiency, approximately half of the students involved in this research project are at A1 level on the Common European Framework. At the time of my field work, the Y3 students were preparing some for *Starters* and some for *Movers*, whilst the Y4 students were preparing some for *Movers* and some for *Flyers.* The majority of those children who took these Cambridge Young Learners Exams passed with results that fall under the overall national score trend illustrated in table 2.

III.1.2.2 The History CLIL/EFL Teacher

The teacher is a qualified primary school teacher with a joint BA in History and English, and 10 years of teaching experience at primary level. In addition, she holds a Master's Degree in Teaching English Methodology which amongst other courses comprises a CLIL module.

Furthermore, she has been actively seeking professional development opportunities for both EFL and the CLIL approach (a series of teacher development programmes abroad). Her genuine interest in on-going

professional development is reflected in the variety of strategies and materials she makes available for her students. In our informal conversations with regards to her role in the present study, she has come across as a reflective teacher. She has constantly analysed her learning curve as a student teacher and then as a trainee teacher in order to identify new training needs.

As far as her students are concerned, and especially in a Romanian school context, perhaps two of the most profitable qualities are her lack of false pretences and fear of losing face. She engages in learning alongside her students, is well aware of her own limitations and is not weary of opening up new learning paths for her students even though this can involve her departing from the safety of the already mastered class rituals.

III.1.2.3 The researcher as a CLIL teacher

My researcher identity is closely seconded by my quality as a teacher. I am also a qualified primary and EFL teacher, with over 15 years of teaching experience and a passionate interest in L2 mediated learning. Although I do not hold a degree as such in History, following from professional development courses, I taught British History at A level. Over the five years spent as a History CLIL teacher for linguistically advanced students, I placed great emphasis on encouraging my students to develop critical thinking skills. In addition to my CLIL work, I taught General English, English for Academic Purposes, and I particularly specialised in preparing A Level students for the national Baccalaureate examination, Cambridge Examinations (CFC, CAE, and CPE) and IELTS. I worked alongside the class teacher on the design and the delivery of the lessons, following principles of team teaching and collegial critical development. Further analysis of the implications of my involvement is going to be undertaken in the Methodology chapter in sub-section IV.2.3.

III. 1.2.4 The Class Teachers

I would argue that in great part, this school's forte comes, from its highly qualified staff. Besides holding Qualified Teacher Status and having obtained all the degrees required in the national teacher development scheme (QTS, followed by 2nd Degree and then 1st Degree), the staff in this educational setting are all holders of BAs in a Pedagogy or Psychology related specialism

(a fact which is not so uncommon especially amongst the urban primary teachers). In addition, most of them have Masters Degrees in Education.

The class teachers' involvement in the project came mostly in the form of class observations and occasional feedback. Additionally, they offered useful information about the covered curriculum, and, when appropriate, they advised about the students' profiles and their family background.

Overall, although the school's connections, facilities, staff, size and enthusiasm towards innovative teaching may make it sound as an elite educational setting, it needs to be emphasized that the study was not undertaken only with those few academically exceptional students. As mentioned earlier the study is undertaken with a whole Y3 class and a whole Y4 class. The point I would like to make here is that all the students who participated in this study are, to a great extent, children of mixed abilities.

III.2 THE MICROLEVEL: CONTEXTUAL ELEMENTS DIRECTLY IMPLICATED IN THE GENERATION OF THE RESEARCHED LEARNING INSTANCES

This section looks at the CLIL Model pursued in this project. More precisely, it analyses those elements that have come closely into the shaping of the learning instances which stand at the heart of this study. Some of the contextual elements which I shall describe here are: the teaching arrangement (the lesson format, the teaching methods, and the structure of the follow-up activities), the module content, the tasks, and the texts. A detailed account of these contextual elements is essential because they have a significant impact on the quality of the generated data.

The CLIL model employed in my project is going to be explained in the following sub-section mainly through my narrative lenses as researcher. Nevertheless, where relevant, there are references to the perceptions of the other participants as well (the CLIL teacher, the class teachers, the students and the parents). The inclusion of perspectives other than mine is possible due to data coming from the follow-up interviews and focused interviews in which students and the CLIL teacher talk about their impressions on the module and on the CLIL approach in general. This data is not used in the main body of this study (i.e. the analysis chapter) where the main focus rests on the actual learning instances.

III.2.1 The main features of the CLIL model employed

At this stage, a brief reminder is needed of the fact that the teaching side of this project (design and delivery) is primarily a joint effort between the CLIL/EFL teacher and the researcher, with only some input from the class teachers.

While the design of our activities is inspired by pedagogic observations on material and task design from Coyle *et al*. (2010), the pedagogical principles that inform our CLIL model come from Coyle's work who proposes the 4 Cs curriculum guidance (*Content, Communication, Cognition, Culture*); the 3As lesson planning tools (*analyse* the content for the language of learning, *add* to content the language for learning and *apply* to content the language through learning); and, finally, the *matrix* audit tool for tasks and materials (2006a&b; 2007a&b). Based on Cummins' matrix of an approach to planning language and cognitive loading (1984), our activities are designed to alternate *LOW linguistic demands but HIGH propositional demands* with *HIGH linguistic demands but LOW propositional demands*. However, through this alternation we did not aim to create low cognitive demands (linguistic and propositional). Rather, we aimed to ensure that, for instance, a highly demanding thinking activity was not overburdened by unnecessarily difficult linguistic structures. Conversely, texts dense in complex structures and potentially unfamiliar vocabulary had, for example, a balanced mix of straightforward comprehension questions and more challenging tasks. It was our scaffolding work and also pupils' learning interactions what helped create that zone of proximal development which took the activities onto a qualitatively higher level (i.e. high linguistic and propositional demands).

Furthermore, our lessons aimed to reflect a good exploitation of some of the socio-constructivist learning principles such as multimodal learning (Kress *et al*., 2001); peer collaborative learning (Tudge *et al*., 1996); teacher scaffolded learning (Wood, 1988; Wood, Wood *et al*., 1978); and, finally, task based learning (Centeno-Cortés and Jiménez-Jiménez, 2004). However much, we felt, these principles could add to the quality of the learning event, we tried not to allow them to take over. We stayed focused on what remains quintessential to the CLIL type of work, i.e. the integration of the content with the target language.

The decisions over the content have been largely made by the class CLIL teacher in the light of her extensive knowledge of the subject matter but also

on grounds of her knowledge of the students' previously covered topics. We worked closely together on the organisation of this information and the task design. Generally, the lessons have a fairly tight focus around the exploration of content-grounded ideas. This is sustained through thinking exercises whereby students are encouraged to hypothesize, use induction and deduction, and critique. This focus on the exploration of multiple viewpoints and the exercising of free thinking through CLIL History is a timely complementing of the still incipient criticality revealed by the Romanian History textbooks.

Despite the fact that the target language remains somewhat subsidiary, a maximum L2 exposure and support is ensured. The L2 to which the students are introduced is authentic in that it brings in topic related specialist vocabulary, and it also aims to equip students with the necessary structures in order to be able to engage in naturally sounding dialogue. Although all participants share Romanian as a first language this is used only occasionally as the lessons are delivered in English. However, this is not done to the extent to which it becomes detrimental in terms of restricting the children to function exclusively in L2. Rather, they are encouraged to make as much use of L2 as possible; otherwise, they are well aware that it is perfectly acceptable to switch to L1 should they need or choose to do so.

Although teaching styles and methods may vary with every individual, we agreed on an array of scaffolding techniques, some of which are as follows: paralinguistic prompting, emotional support, attention coaching, thinking partnership, and embedded linguistic scaffolding (also see Pawan, 2008 for more CLIL specific scaffolding strategies). We provided as much support as we felt was needed for those teacher led parts of the lesson and offered scaffolding as requested during the students' more independent group activities. As a general rule, we tried to avoid presenting students with readymade interpretations of concepts. Rather, we tried to allow students to arrive at their own understanding of the presented information and then we would work with this understanding and help them elaborate further.

Wells (2002) describes a similar socio-constructivist teaching approach (CHAT) where there is a mix of learner-directed activities and teacher-led ones. The former, refers to instances where students are supposed to take charge of what they learn, and the latter implies that the teacher expands on the content aspects selected by the students. Most of our lessons would start

with a teacher lead-in (the content is introduced and the task is set), followed by independent group work, and then rounded off by another teacher-led session where the students' work is being discussed.

In terms of teaching aids, where appropriate, we made use of the following: printed materials (textbooks, handouts), natural materials (relics, rocks), intuitive materials (miniature models), and figurative aids (pictures, photographs, story boards, maps, audio-video images). In addition, we took great care of the 'environmental provisions' which refer to the support inbuilt in the learning environment such as wall display (chronological charts, vocabulary lists), mini-library and other auxiliary supporting materials (Anghileri, 2006).

With regards to the approach to learning instilled, the CLIL class teacher affirms that generally she tries to strike a balance between collaborative learning and individual exploration, thus providing opportunities for both group work and individual tasks. However, it needs to be noted that, in general, Romanian primary education is a fairly competitive learning environment. Although many teachers have become familiarised (at least on a theoretical level) with progressive concepts such as Gardner's multiple intelligence theory (1983), through their attitude, the teachers still heighten the students' awareness of their own and peers' levels of ability. This is a residue practice from the communist dogma which despite being founded on the very idea of the power of the collective, paradoxically, did not encourage a tradition of collaborative work in school (Ghergut, 2010). On this front, the teachers in this school are making attempts to depart from artificially stimulated competition and over-emphasis on scoring high academically, towards projects which also help the building of team work skills.

The CLIL model came across to our students mostly as we intended it; nonetheless, there is some variation in their perceptions of it which needs to be acknowledged here.

With regards to the balance between content and the target language, the majority of the pupils define our lessons as *History English*. The children describe the lessons as 50% History and 50% English, with one Y3 student saying that *'these lessons have been more than one or the other; they have been 51% History and 51% English'* [Y3 student]. Some pupils regard the lessons in this project as mostly history classes, i.e. very similar to their L1 History lessons. Only a few liken our lessons to their EFL lessons.

As far as the level of difficulty is concerned, the students perceive the lessons in our project as somewhat similar to their other CLIL lessons but *harder* than their usual EFL classes. They explain that the increased level of difficulty comes from having to deal with both language and content, and on the other hand, from exposure to new information and authentic L2 text. Nonetheless, they report that it is this particular increased difficulty from which they derive a great deal of enjoyment and satisfaction in the CLIL type of activities by comparison with the EFL or even some of the L1 mediated lessons. Some of the testimonials are as follows: '*The vocabulary we have to deal with here is more exciting than in the Cambridge lessons*' [Y3 student]; '*Things don't just come to you, you have to think about it to work at it to get somewhere'* [Y3 student]; '*It's definitely less boring than other lessons where we repeat the same things over and over again'* [Y4 student].

Many students find such lessons useful because they feel it enables them to make cross curricular references, more precisely, to use interchangeably information and skills between CLIL World History and Romanian History, Citizenship, Geography, Literature and Arts: *'it's about new facts and you begin to see how things link with things other teachers have explained'* [Y3 student].

Neither prior to this project nor during it, was there any intention to set up the CLIL approach as the ultimate progressive approach in order to place it in stark contrast with the EFL practice. Our creed is that one needs to rethink the argument of CLIL (innovative type of learning) vs. EFL (ritualistic and cognitively unchallenging) more in terms of what constitutes good and bad classroom practice within each of these two strands. The school CLIL/EFL teacher, based on her experience, has emphasized the complementarities between the two, and hopes that the children would come to use the two in conjunction: *'the EFL work as we do it here raises awareness of grammatical structures while the CLIL lessons put to good work all this language'* [CLIL/EFL Teacher, Interview].

However, in spite of the CLIL/EFL teacher's awareness of the potential of both approaches when taught under the auspices of good practice, she remains critical, to a certain extent, of the EFL curriculum and materials, and explains that the *'ubiquitous topics and the preparation for the Cambridge exam gets a bit heavy going at times'* . She feels CLIL allows her that space for thought-provoking content which can foster critical analysis. She also believes that in

spite of the demanding preparation CLIL sets on teachers (because of lack of guidance and materials) children would greatly benefit from an alternation of CLIL and EFL from as early as the first grade (6/7years old).

While the parents welcome the CLIL initiatives with hopes of more L2 exposure, the class teachers see a great deal more in this learning approach. Based on observations of our lessons and previous CLIL activities, they notice that *'this approach exploits the word-image association to help with the fixation of the notions taught at an intensity which is not reached in the L1 mediated lessons'* [Y4 class teacher]. Then, *'the variety of aids and hands-on activities go beyond being compensatory means, it becomes a way of learning, a very enjoyable one'* [Year 3 teacher]. Another observation regards the heightened degree of attention students need to pay in order to tune in *'It is a positive thing the fact that they have to learn how to pay more attention, this can help them in my classes as well'* [Y2 class teacher]. However, these teachers also point out the need to maintain a sensitively pitched level of difficulty, to give clear instructions, and to ensure that sufficient content reaches the students. They notice that their students have some difficulty usually at the beginning of a CLIL lesson when the topic and the task are being introduced after which, they feel, the students manage to work things out and perform as usual.

To sum up, the CLIL model employed here has been intended as mostly content driven where L2, although given the required attention, remains somewhat subsidiary to the development of the content and the exercising of articulate and free thinking. Besides the interplay of content and target language, which remains the most important aspect for us in planning and teaching throughout the project, there are some other objectives, some of which are: to create engaging tasks, to open up opportunities for collaborative peer work, and to boost the quality of the learning dialogues. Based on testimonies from the other participants in the project (students, class teachers, parents) it appears that we have managed, to a large extent, to get our vision across as to the kind of CLIL work we encourage.

III.2.2 The teaching arrangement

III.2.2.1 World History CLIL: module syllabus

The module is based on the *Step into* children's history series, and comprises aspects of architecture and religion, covering topics such as Ancient China (Steele and Lim, 1999), The Iron Age Celts (MacDonald, 2004), The Romans (Steele, 2007b), The Arctic World (Green, 2000), The Ancient Egypt (Steele, 2007a), Medieval Castles (Clements, 2006), and The American–Indians and the Colonists (MacDonald, 1999). More exactly, the children explore some characteristics of ancient settlements with a focus on the architectural features of the Celtic hut, The American –Indian tepee, the bony bunker and the igloo, the Chinese pagoda, the European medieval castle, and Roman houses. In addition, the module brought in elements of religion in that it explored the notion of spiritual leader, and the implications of monotheism and polytheism in the contexts of pre-Christian faith, Christianity, Buddhism, and the Roman cult.

III.2.2.2 The classroom-based lessons

The lessons tend to start with a 15 minute teacher-led section in which the topic related elements are introduced or refreshed. This is followed by a 15 to 20 minute group-based collaborative exploration of the task-at-hand which brings up what becomes salient to them. For the group work section the students are organised in groups of three or four. They are expected to collaborate and work independently; nonetheless, if elicited, help is provided either by the class teacher or the researcher. The collaborative task is followed by a fixation activity whereby the teacher assists with the exploration of the students' solutions or answers with the aim of furthering their understanding.

As hinted in the discussion of the macro-level layer (in Introduction), uniformity is perhaps the greatest impediment in the way of developing tolerance towards diversity. We intentionally introduced elements from various religions in order to provoke students to apply a multiple perspective on any deeply set beliefs they may harbour. For instance, in one of the introductory lessons, where the students revised the notion of chronology and worked with time lines, some of the students remarked that the Christian (AD and BC) partition of eras is the only logically acceptable one as opposed to

the Old Judaic system or other ancient methods of devising time. Another example would be the discussions we had with the children around the different roles of a spiritual leader in terms of the expectations of the particular era and community in which they lived.

In the CLIL model we promote, we encourage students to articulate their thinking (i.e. reason inductively and deductively). For instance, many of the set questions and tasks provide plenty of opportunity to make inferences about people's lifestyle through analysing features of houses of different communities. Some examples are as follows:

- *There was a fire going day and night n the middle of the Celtic hut. How come the hut did not catch fire?*
- *Why did the American Indians need these easy to pack tents called tepees?*
- *Why did the Celts build their villages on top of hills?*
- *Why did the Romans want to get rid of the Druids?*
- *What animal bones would be suited to support the roof of a bony bunker?*
- *Why did pagodas attract lightning strikes?*
- *If you were a great Chinese emperor and you had to decide the building of the Great Chinese wall where in the country would you choose to build it and why?*
- *Why did the round Celtic hut have no windows and a low door way?*

The students were provided with language sheets tailored for each activity. For instance, they had available pictures and diagrams labelled with specialist vocabulary, *the language of learning (timber-framed thatched roof; chieftains; wicker fences; foothill, round hut; and pottery*). Additionally, they had a battery of useful phrases to smooth the learning interaction, *the language for learning* (*Yes please, No thank you, Could you pass me the scissors, Who can tell me, What do you think about this, Shall we try and make a decision, We are a bit short for time*)

We tried to set up the end of lesson teacher-led section as a discussion and reflection time as opposed to a time when the correct answers were delivered. For those instances when one answer was expected, we made sure that the reasons why that particular answer was more acceptable were discussed.

III.2.2.3 The follow-up activities

The CLIL model pursued here embraces a conceptualisation of learning as a socially-embedded phenomenon where cognitive constructs such as 'joint understanding' (Hogan and Tudge, 1999), 'inter-subjectivity' (Wertsch, 1985), and 'the meeting of minds' (Perret-Clermont *et al*., 2004) emphasize the socio-cognitive unity. On a spectrum from a collaborative to a more independent learning mode, the classroom based arrangement brings to the fore learning as a collaborative and cooperative enterprise. The follow-up activities still reflect a certain degree of collaboration stemming from the interaction between the researcher and the interviewed student. However, these follow-up interviews are meant as an opportunity to bring to the fore the more independent side of the learning enterprise as well. The interviews are set up to occur as naturally as possible in keeping with the classroom based learning atmosphere where students are encouraged to explore individually, but are also welcome to elicit further clarification or engage in on-line thinking with the researcher.

The learning exchanges between the student and the researcher are dealt with in English, with all the materials involved pitched slightly above the linguistic ability level of the students. Similarly to the class-based situations, students are made aware of the equally acceptable alternative of using L1 so as to avoid inhibition and limited participation. The tasks target predominantly the receptive side of the learning process; i.e. they revolve around a piece of short text (approximately 70 words) or a brief lecturette (on average 3 minutes) both accompanied by pictures. Students are allowed as long as they need, and when they are ready, they are invited to give their interpretation /understanding of the text they read or listened to. They are free to choose any strategies that suit their learning style. The texts used in the follow-up activities are not artificial texts aimed at creating a controlled experimental research approach. Rather, these texts can be described as 'stands in' as they remain, to a great extent, within the parameters of the topic and style of work undertaken in class (Edwards and Potter, 1992). However, while there is a preoccupation for maintaining continuity with the class lesson in terms of the context studied (e.g. lifestyle in the Arctic World), the stretches of text used in the interviews are marginally more difficult linguistically and conceptually than their classroom counterparts. More precisely, the texts and lecturettes are brief but highly authentic without any fine-tuned linguistic structures. In addition, these texts tend to introduce a rather intriguing occurrence that

would not be that familiar for the students (e.g. A Nenet boy from Siberia feasting on raw reindeer meat). In addition, the accompanying pictures are of medium self-explanatory power. It needs to be acknowledged, that there is a twofold rationale behind the decision to use slightly more complex language and content in the follow-up activities. This rationale is driven by the research focus of the project which looks at how children actually learn. The underlying premise being that a more challenging task is more likely to expose those reasoning stages which would reveal underlying strategies. Additionally, a preoccupation with balancing levels of difficulty between phraseology, content and visual representation is to ensure that the children's choice of comprehension strategies is not unintentionally skewed towards one component to the detriment of the others. Finally, I would like to stress that, although, the follow-up activities may look somewhat more technical by comparison to the classroom-based interaction they are not a simulation of learning. The interviews capture those more solitary learning instances which do not occur exclusively in one-to-one learning interactions, but they also occur, and quite frequently, in class in the midst of a group activity, only that they are less visible.

The context layers as explained in this chapter and the Introduction section (macro-level) are represented in the diagram below.

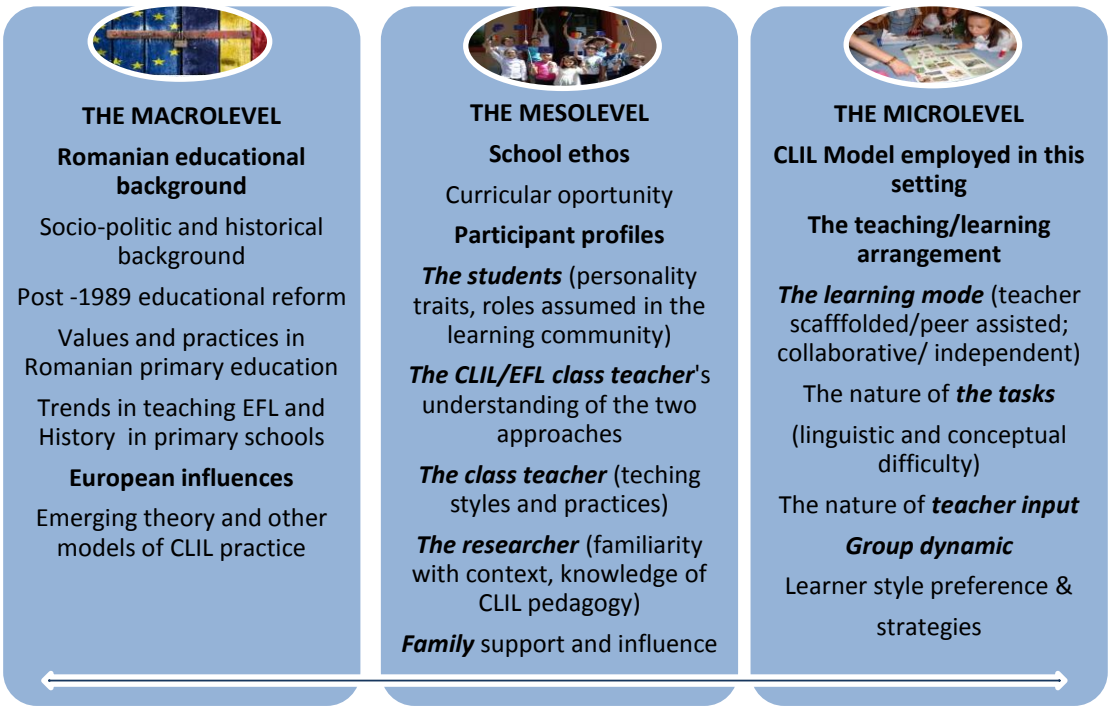

DIAGRAM 2: LAYERS OF CONTEXT surrounding the History CLIL learning event

The Introduction section of this thesis opens with an explanation the *macro-level*, i.e. the socio-politic and historical background against which the post-1989 educational reform unfolds. It has been shown that the transition years reveal a certain internal tension stemmed from, on one hand, a tendency to embrace Western influences and, on the other hand, a nostalgia for past certainties. The European guidelines which reached the Romanian educational landscape immediately after the 1989 have resulted in a sequence of experimental projects, somewhat arbitrary and without much finality. However, latterly, more educationalists and philosophers call for a genuine revival of educational research and a carefully considered balance of global and local elements in the education sector.

The exploration of the *meso-level* describes an educational setting responsive to the current socio-economic reality; a school which tries to offer students relevant curricular options. The introduction of the CLIL teaching approach in this particular school is in great part possible due to the dedication of the staff. However, although not widespread nationally, CLIL projects at primary level are becoming an increasingly frequent occurrence.

The *micro-level* section details the rationale which underpins our choice to introduce primary school pupils to a CLIL module on World History. It, then, analyses the CLIL model we subscribed to, and details the teaching/learning arrangement.

Finally, a reminder of my role in this project may be helpful at the end of this chapter. Whilst for the teaching side of the project, I engaged alongside the CLIL class teacher, in design and delivery, as a researcher, my focus is on the intricacies of CLIL learning experience; a research focus which will be exhaustively presented in the following chapters.

IV: METHODOLOGY

Overall, this chapter aims to interweave a narration of the research as process with a discussion of the methodological choices made as part of this study.

The opening section of this chapter provides an outline of the chronological frame of the study as process. This is realised by maintaining as a central theme the development and refinement of the research questions and aims with a view to highlighting the progression of the study as an exploratory process. In addition, I have intended the opening section (IV.1) as a navigational tool for the reader in view of the subsequent sections in which the research design and the research paradigm are discussed with application to all the phases in the study.

The second section explores the underpinning ontological and epistemological foundations of this study. In essence, the choice to undertake this study as an explorative qualitative piece of research of the naturalistic and interpretive kind appears to sit well within the wider constructivist view of knowledge elaborated upon in the literature chapter. In addition, my role as a researcher and profile are analysed in an attempt to enhance the transparency of this research account.

The research design section conceptualises this investigation as an explorative, longitudinal, and educational case study. It also discusses the implications of the method of sampling followed, and provides an inventory of the employed research tools.

The closing section aims to illustrate how the research tools and the investigative approach interact and lend scientific trustworthiness to this study. Finally, some ethical implications are also examined to show that healthy ethical standards have been maintained throughout the entire course of this project.

IV.1 A CHRONOLOGICAL OUTLINE OF THE STUDY AS PROCESS

For clarity, I shall open the methodology chapter by providing a chronological account of the prior preparation and of the field work itself as follows.

The opening section explains how the idea for this study came to life and looks at both the principles and the practicalities which guided my decisions while setting up the study (February 2009, e-mail contact and Skype conversations with the County Primary School Inspector in order to explore options in terms of school participation and gaining access). The following stage comprises the pilot study undertaken in a primary school over 2 weeks in April 2009, when after trial lessons and negotiations with the class teachers and the school management, an agreement was laid out for long term participation in my research project. This is followed by the main stage of the project which consists of the main data generation when together with the school CLIL teacher I engaged in designing, planning and delivering lessons as part of a CLIL World History module (October and November 2009). The closing stage of the field work refers to a follow up visit to the school which further focuses on the learning process (one week in May 2010).

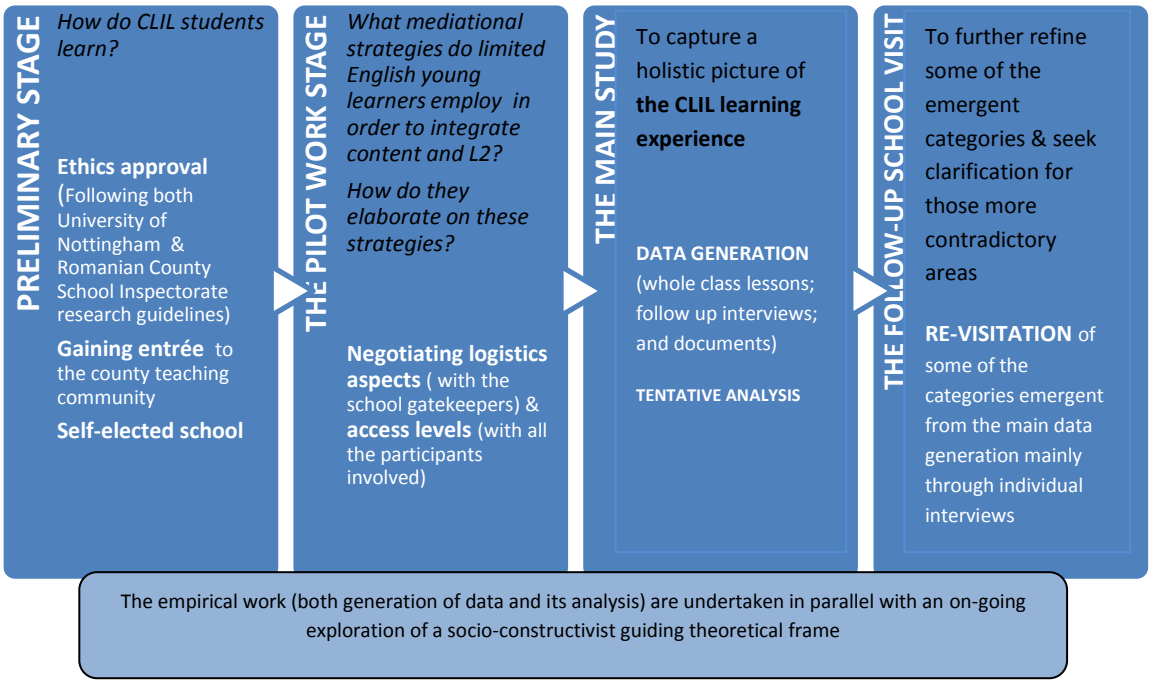

DIAGRAM 3: A chronological mapping of the field work

IV.1.1 Preliminary stage

Many research projects are ignited by an idea or interest in a phenomenon. This can gradually take the form of a set of specific research questions, which in turn may lead to the design of a systematic inquiry. As stated in the Introduction chapter, my research project stems from a long standing interest in the acquisition of knowledge through the means of a foreign language. Having approached my lessons, over the first ten years of my career, primarily from the perspective of being trained to teach to various approaches, I felt that contemplating the latest teaching approaches or even the post-method trend, was not taking me sufficiently close to the learning phenomenon as such. I felt that in order to attain a deep understanding of the nature of the L2 mediated learning phenomenon, I needed to gain insight into the processes through which students acquire knowledge. Thus, I started from a generic and apparently straight forward research question 'How do CLIL students learn?'

Once this idea was formulated, I commenced an exploration of theoretical strands, which I undertook in parallel with the empirical work with an intention to allow theory and data to inform the course of my investigation. I also started looking into the practicalities of identifying a school which would host my study. I, therefore, contacted the County Primary School Inspectorate, explained my research idea and asked for permission to approach schools in the area. The response was fairly positive. Clear guidelines for conducting research in Romanian primary educational settings were made available. Moreover, the primary inspector agreed to distribute an expression of research interest information sheet on my behalf during an INSET day held by the County School Inspectorate. This maximised my chances of reaching a fairly large number of schools.

I applied this strategy not because I wanted to work with several schools in parallel as this would have yielded an amount of data far beyond the scope of a PhD project; rather, I popularised my research idea in order to enable potential participants, whom I could not have reached otherwise, to approach me. This strategy led to self-elected participants, the implications of which are going to be discussed in detail under the section on sampling. Furthermore, my intention was to avoid conducting the study in a school for which I previously worked, a decision which is going to be further explained in the section which deals with ensuring trustworthiness.

I was initially contacted by primary teachers from four different schools and after some discussion, I was able to settle for one school which had the firmest offer in terms of long term commitment, interest in the CLIL approach, and willingness to be involved on the part of class teachers, students and parents. This school, as detailed in the context chapter, comprises mixed ability students from various social backgrounds and is representative of central urban areas in its region.

IV.1.2 The pilot work

I started my pilot work with an investigative interest channelled on how primary school children with limited English cope in a CLIL learning environment. My initial research questions were as follows: '*What socio-cognitive meditational strategies do students with limited English employ in order to process the integration of content with L2*?', and '*How do students elaborate on these strategies*?'. Initially, through 'elaborate' it was meant to look at observable strategies, but then as I progressed with my pilot work, the added value of self-reported strategies became increasingly obvious. The pilot field work, undertaken over 2 weeks in April 2009, covered negotiations in terms of access, logistics and researcher positionality in relation to the school staff, and some trial lessons followed by interviews.

IV.1.2.1 Negotiated aspects and ethical considerations

Whilst the ethical approval granted by the University of Nottingham and the County School Inspectorate were dealt with at the preliminary stages, the next priority was to obtain ethics clearance from the school gatekeepers.

Most importantly, I sought to negotiate the level of access to students' work and learning behaviour with all concerned. In this sense, I needed to ensure that all involved understood the nature of my investigation, and the fact that, at times, this involved intensive questioning about the students' displayed and reported learning behaviours. In this regard, I prepared consent forms in English and Romanian for all involved (students, parents, class teachers, school management and the Local Educational Authority). I was also granted access to staff shared folders not only on class general information (such as syllabi and examination results) but also on individual students' profiles.

The participant's consent form stipulated that informed consent was to be sought and that privacy and confidentiality were to be maintained at all stages. In this respect, sufficient detail was presented prior to the study for children and parents in order to enable them to make informed choices. Children were made aware that participation in videotaped material and task completion as part of the individual interviews was not compulsory and that they could withdraw at any time during the study. Furthermore, there was no form of psychological coercion or deception involved (neither through misleading children nor by omission of information). I was fully aware from the onset of the importance to maintain a sensitive approach so as to avoid embarrassing people. I also pledged professional etiquette to act to the best of my linguistic ability to ensure that data would not get distorted in translations (Christians, 2011).

Minimum disruption in the school timetable was the next discussed aspect. I agreed that my observed or videotaped lessons had to occur in the spaces initially allocated in the timetable to the CLIL lessons. In addition, we agreed to schedule any follow-up individual interviews after the students' lunch break when, after having finished the more formal lessons, they start an after-school type of programme.

Another aspect regarded the technicalities around recording and videotaping the lessons. Again, particular attention was paid to logistics in order to ensure a smooth facilitation of the research process without disrupting the school routine. For example, the mobility of the technical research equipment was discussed. The school staff insisted that students should not migrate between lessons, i.e. they needed to remain in their classrooms because of the short breaks (approximately ten minutes between lessons). Thus, I agreed that I would ensure a smooth transfer of any technical equipment between rooms during break time.

Furthermore, the relationship with the staff, in particular the CLIL teacher, and myself was negotiated. We felt that it was beneficial for all involved and also for the natural course of the study that we assumed a collaborative stance. I therefore agreed to engage with the class teacher in a partnership which involved us equally in the planning, design and delivery of the trial and main study lessons.

Finally, the content of the history module, the balance between the use of L2 and L1, the lesson template and teaching style were discussed. The CLIL

model with which we both felt happy was a content driven and discovery oriented one, in tight relation to what the class teacher had already been practising. We felt that both student-driven and teacher-led type of activities had a place in our lessons. We subscribed to the view that offering maximum L2 exposure would foster fluency; nevertheless, we considered the need for embedded scaffolding and the role of L1 expression.

IV.1.2.2 Trial lessons

The field work of the second week yielded 4 lessons worth of videotaped material which was used to guide future adjustments, i.e. the preparation of the main data collection stage. In addition, some follow-up interviews were conducted, the results of which formed the basis of further reflections on the initial research questions. The class teacher and I each conducted two trial lessons on Ancient Egypt, with only myself being involved in the interviewing process.

On reflection, we felt that, in spite of preliminary discussions, the lessons resulting from the pilot study were too broad as far as the content was concerned, and overly teacher-led. Therefore, we felt that we needed a much tighter focus for each lesson as well as a carefully balanced alternation of teacher-led and student-driven activities in order for the students to be able to maintain concentration.

With regards to the content of the lessons, we decided to build each lesson around the exploration of one narrow topic. We also noted that a healthy balance of concrete and abstract concepts was needed in order to enable students to work effectively on the understanding of the content.

Next, the lesson format needed to show a better exploitation of the potential of a socio-constructivist learning framework. In spite of our preliminary conversations and affinity for this theoretical strand, we still felt the lessons were dominated by our discourse and that students were not allowed enough space. Therefore, we concurred to follow a lesson template, whereby the class started with a brief teacher introduction of content and task. This was, then, followed by a twenty minute student group work session, and rounded off with a ten to fifteen minute teacher-led session. In this way we wanted to avoid slipping into whole lesson frontal activities, and also we wanted to allow

what was salient for the students to manifest itself in the lesson rather than have us dictate the course of their investigation of the content.

Furthermore, we paid special attention to the nature and amount of the input we, as teachers, provided. Broadly speaking, teacher input can be anything from the content-related information brought into the lesson, to the type of materials made available, and the type of activities in which the students become involved. Because the nature of this teacher input is bound to impact on the data produced it becomes essential to decide on the level of teacher involvement in the student-driven group activities. In this respect, rather than allow the researcher and the class teacher to take charge, we decided to offer our assistance mostly in response to the students' elicitations.

The classroom dialogue constituted for me an obvious starting point. A brief analysis of the transcripts from the trial lessons revealed a predominantly unidirectional type of instructional dialog, which was not dialogic per se. In other words, although this was classroom-based dialogue, it did not display features of a dialogue of learning, i.e. of free thinking and exploration. This was a strong indication that a more natural balance in terms of learning interactions was needed, in order to maximise my chances to witness genuine learning events.

IV.1.2.3 Trial interviews

The individual interviews I conducted at this piloting stage were unstructured and invited the students to reflect on lessons mostly in terms of content and linguistic difficulty. In addition, I asked students to try and explain the methods through which they worked on understanding during the class based activities.

The feedback students offered on our lessons was useful and largely concurred with our concerns. They also felt that the lecturing was too long and difficult to follow, and that some of the proposed content was at times too abstract or simply not sufficiently captivating. Other aspects students noted regarded the overall pace of the lesson, teacher's talk quality (speed and comprehensibility), and, the need for some play or fun activity time as part of the formal lesson.

While the students' more general feedback on the lessons was fairly precise, the accounts which I was hoping for with regards to their comprehension oriented learning strategies, were somewhat vague. I was, however, able to sketch a few tentative categories based on students' reported strategies for accessing L2 mediated content. Some of these appeared to indicate a reliance on already existing schemata to integrate new information, a preference for processing information starting from the most familiar aspects, a tendency to build a scaffold of elements before attempting to approximate meaning, and an intricate interplay of L1 and L2 as cognitive tools to organise higher order thinking while working on comprehending incoming information.

The conversations I had with the students as part of these follow up interviews made me realise the potential this interviewing space could have if used effectively. It, therefore, became clearer to me that in preparation for the main study, I needed to conceptualise and set up the follow up interviews as a learning spaces rather than mere feedback session. In other words, instead of having the interviews just as opportunities for commenting on and recounting learning strategies, I needed to generate more learning encounters predicated on the classroom based-ones.

IV.1.3 The main data generation stage

The field work was undertaken over nearly two months (October and November 2009), during which data was generated (18 lessons altogether) in association with field notes, participant observation, follow-up individual interviews (57 short interviews – 29 students being interviewed), two focus interviews with Y3 and Y4 students, one interview with the CLIL class teacher, and student generated materials.

Usually the work pattern was as follows. I would spend every other day of the week in school videotaping lessons, teaching alongside the class teacher and interviewing students. Normally the lessons would be held in the morning and any follow-up interviews were conducted in the afternoon of the same day. The remaining days of the week would be used to help with lesson planning as well as to download and organise the collected data. The investigative tools from this stage of the study, in particular, are going to be analysed in great detail later in this chapter under the section on research design, where, in addition, relevant connections are made with literature on qualitative

research. For now, I shall remain focused on the narrative of the investigation as process and show how the reflections from both trial lessons and interviews helped me translate my incipient research questions into more specific research aims.

Following from the pilot work, I became more confident that both the classroom based learning dialogues and the more private reflections on strategies were equally relevant for an in-depth understanding of these students' learning. This idea of capturing a holistic rather than an atomistic view of the learning phenomenon seemed to also concur with a socio-constructivist frame whereby a dialectical rather than a fragmented analysis of phenomena is advocated. It can then be argued that the research aims of this study were, to a large extent, progressively refined in the light of the generated data; nonetheless, they were also, in part, informed by those theories and concepts which I presented in detail in the literature section.

I, therefore, identified as the main unit of my investigation students' CLIL learning experience as observed by the researcher but also as perceived by the students. Learning experience is defined here as meaning making while accessing and inhabiting learning spaces within the L2 mediated discourse. Following from this, I felt it became relevant to consider both learning generated during students' interaction with the tasks and the learning emergent from the dynamics between the students' interactions with others.

Thus, the first set of research aims are grouped under the intent to explore the students' capability to navigate (access and inhabit) learning spaces within the L2 mediated discourse as follows: to identify the thinking activity which underpins the processing of the L2 mediated discourse; to appreciate the shape of the fluid interface between the intra- and inter- psychological planes in the process of meaning making; and to map the types of knowledge underpinning the students' processing activity. The second set of research aims regards the investigation of the potential of the CLIL learning experience to sustain dialogic learning and higher order thinking. They are formulated as follows: to look at the nature of the discourse generated in the course of learning in terms of both dynamics (patterns) and substance (tracking intellectual activity); and to tailor a multilayered microanalysis around conversational and instructional learning units, discuss how they complement each other and critically evaluate their potential to support deep learning.

It was becoming clearer, as I was progressing with my field work, that such aims called for a balance between a neo-behavioural type of investigation, whereby I would be looking at the displayed learning behaviour (observation of videos) and a more mentalistic investigative approach, in which I would need to include students' metaconititive reflections (individual interviews).

IV.1.4 The follow-up visit

The one week follow up visit (May 2010) consisted of the videotaping of several individual interviews, and was meant as a re-visitation of the researched learning environment with a view to clarifying certain aspects from the analysis of the main data. For example, one of the aspects, I felt, I needed to revisit regarded the processes underlying students' progression of their understanding of newly and more abstract introduced concepts. In addition, I was interested to tease out students' further reflections on the CLIL learning experience and the perceived usefulness of our CLIL model.

This was not intended as a follow up visit in the interventionist acceptation. My intention was not to propose a CLIL model to be piloted, implemented and then evaluated. The class teacher had already worked with some of the features of the CLIL model on which we finally agreed. Similarly, the students were already familiar with history, science and cross-curricular activities undertaken through the medium of English. Furthermore, prior to my arrival, the students in this school had been exposed to a range of teaching and learning approaches from controlled and formal to less guided and more creative ones. Finally, I was not the first visiting teacher or researcher as the children had previously been involved in other European projects.

All of the above arguments come in support of the methodological set up of the study as an on-going exploration as opposed to an interventionist design. I am acknowledging the fact that each study or learning encounter as a whole is a unique occurrence because of the dynamics created by the interaction between the component elements. In this regard, the occurrence of my research project, i.e. the interaction between my ideas and this educational site in its entirety, may have been a unique experience for all involved. However, the constitutive parts of this educational encounter (teaching styles, some of the features of the CLIL approach, the notion of visiting teachers, and even the idea of a psychological study), were not novelty aspects for most of the participants involved.

IV.2 COMMITTING TO A RESEARCH PARADIGM

Lincoln and Guba (1985) note that in order to obtain meaningful results any inquiry must exhibit congruence, in their words 'value resonance', i.e. the inquiry line, the researcher, the methodological paradigm, and the theory strands must come together as a harmonious whole with revelatory power over the phenomenon under investigation.

In the literature chapter, a socio-constructivist perspective is assumed; the notions of reality and knowledge are explored in order to conceptualise learning in general, the L2 mediated learning phenomenon in particular. In brief, it is proposed that learning be regarded as an individual and collaborative endeavour without clear cut boundaries between the two; that learning be approached as a holistic unit; and finally, an inclusive view of learning is advocated because of the complexity of the L2 mediated learning phenomenon which requires the lenses of different, and sometimes even conflicting, paradigms.

This section explores the notions of reality and knowledge but from the perspective of researching (uncovering and understanding) learning. While in the Literature chapter (especially in the extension provided in the Annex) the aim is to explore the ontological and epistemological foundations of learning, per se, from a socio-constructivist perspective; in this section, the aim becomes to explore how to learn about learning. More specifically, key notions such as reality, truth and knowledge are brought into focus again but this time with a view to articulating a methodological framework which has the potential to approach learning from multiple angles and viewpoints. On one hand, the methodological approach here is largely informed by recommendations in the literature as to suitable tools and techniques to tackle learning in the making; on the other hand, my own image of reality, understanding of what constitutes valid knowledge and how this should be generated comes into play to a great extent.

As a methodologist, Vygotsky appears to be highly aware of the implications of following a particular method for the results of any study: '*the search for the method becomes one of the most important problems of the entire enterprise of understanding the uniquely human forms of psychological activity [...] the method is simultaneously prerequisite and product, the tool and the result of the study'* (1978:65).

IV.2.1 A moderate relativist ontological view in tandem with a constructivist-contructionist epistemological stance

'There is no talking about reality independently of our conceiving it.'

(Pring, 2000:51)

Especially with investigations of an exploratory persuasion, it becomes difficult to confidently and neatly attach methodological labels or to subscribe to clear cut investigative research traditions. Largely, my methodological approach is informed by both a constructivist and a constructionist view of knowledge. More specifically, it subscribes to the paradigm advocated by Lincoln and Guba (1985) and later developed by Denzin and Lincoln (2005) as follows.

- It assumes a moderate relativist ontology (I incline towards an ontological position of multiple conceptualisations of one reality rather than existing multiple realities as such);
- It embraces a subjectivist epistemology (Respondents and myself as researcher jointly create meaning and determine the course of the investigation); and
- It employs a naturalistic kind of inquiry with features of ethomethodology and phenomenology.

Throughout the investigative process I display a clear orientation towards a relativist conceptualisation of reality and truth. This study is not set up as a researcher-driven study, nor does it follow an a priori rigidly set agenda. The fact that space is allowed for the participant students and the school staff to participate to varying degrees into the shaping of the project confirms my understanding of reality as being a recast of each individual as well as a construction emerging from the dynamics between these individuals.

More specifically, I am in agreement with Pring (2000) about the existence of one reality and of the different ways in which individuals perceive and project it. In Lincoln and Gubas' terms (1985), my study reflects, on one hand, a belief in a perceived reality (the acceptation that there is a reality out there independent of our will but which we cannot fully know); and on the other hand, a view of an individually and collectively projected or constructed reality.

Both perceived reality, to a larger extent, and constructed reality, to a lesser extent, admit to the existence of one reality. The former takes this

acceptation somewhat close to the idea of an objective reality but without an intention to strive to uncover that unique reality. Instead this is looking to uncover people's accounts and perceptions of this reality, if unique. The latter trend only subliminally accepts the existence of a unique reality because it acknowledges persons and objects as tangible entities. It however differs from the former view in that it departs significantly from the idea of an objective reality, and proposes that not only abstract concepts (such as sets of beliefs – paradigms) are constructions but even those more tangible entities have meaning ascribed to them (Lincoln and Guba, 1985).

From an epistemological standpoint, the research decisions of any study tend to reflect the investigator's positionality on the objectivity – subjectivity continuum. More specifically, epistemological questions revolve around what can be classed as scientifically valid knowledge, what can count as relevant knowledge (expert or novice generated knowledge), and whether experience can be considered as knowledge of such significance to the point to which it could validate or refute grand theories.

My methodological approach reflects an understanding of subjectivity as inherent in all human activity (Lincoln and Guba, 1985, 2003). From this standpoint, then human experience in general becomes a recurrent construction; and the research enterprise makes no exception. The belief that a minimalisation of the occurrence of subjectivity will boost the scientific value of a study becomes at least frail if not even unfounded. Being subjective is not something which needs to be addressed as in eradicated or cured from an academic standpoint (Taylor, 2001); rather, 'the subjectively lived experience' is a natural state of affairs which needs to be acknowledged and 'celebrated' (Alder and Alder, 1994:380). As long as transparency, systematicity and a high level of criticality are ensured, acknowledgement of subjectivity does not necessarily make one's method less scientific (Pring, 2000).

In addition, I share Bruner's view that people's intellectual potential should not be underestimated, that people can process different knowledges in an 'intellectually respectable way' irrespective of age (Bruner, 1960:80). It can, therefore, be argued that knowledge generated either by novices or experts, is equally valid. This study equally exploits the researcher's perspective (observations of learning behaviours) and the young learners' perceptions of their own learning activity (reports of learning behaviours).

The constructivist paradigm advocated by Lincoln and Guba (1985, 2003) has been criticised for being built on internally inconsistent pragmatic beliefs. Lee argues that 'their paradigm seems to slide obscurely between radical constructivism and social constructionism' (2011:8). Lincoln and Guba label their proposed paradigm as *constructivist* (meaning making activity of the individual); nevertheless, some of the tenets of their research paradigm display definite features of strong constructionism (collective generation of meaning shaped by language conventions and other social processes). For example, their proposal (1985:37) that 'the knower and the known become fused in a coherent whole, interacting to influence each other' has been held as evidence of socio-constructionism more than constructivism as such (Lee, 2011).

What falls under close scrutiny is the view that the borderline between ontology and epistemology becomes blurred to such an extent that construction*,* as the mechanism, creates both knowledge and reality (Guba, 1990). Lee (2011) argues that interaction between pre-existing entities does not necessarily result in a fusion of ontology and epistemology. For instance, if one changes their perception and understanding of a tangible entity this does not necessarily imply that that entity becomes modified in itself; rather, a new conceptualisation is being born and not a new element comes into existence.

Crotty (2003) takes this further and comments that closeness to 'realism in ontology and constructionism in epistemology turn out to be quite compatible' (2003:11 *cited in* Lee, 2011:7). For example, versions of realism such as subtle realism (Hammersley, 1992), ethnographic realism (Lofland, 1995) reflect an ontological realism whilst at the same time accepting a form of epistemological constructionism (Altheide and Johnson, 2011).

All considered, I would argue that this study does not pursue the more radical relativist views of created reality and multiple or parallel realities which assert that there is no reality outside our constructions of it. Instead, it situates the inquiry approach in a moderate relativism. Epistemologically, the study holds as central the synergy between the knower, the researched into and the more established bodies of knowledge.

I am in agreement with Colliver (2002) that it may be sounder to abandon the ambitious project of pinpointing reality, and instead to redefine truth in terms of consensus since conceptions of reality may be many and different from

reality itself. Similarly, it may be more revelatory to define knowledge in terms of usefulness. Moreover, I concur with Lincoln and Guba's view of maintaining as a justified claim to knowledge any piece of inquiry which offers a certain level of *verstehen*, i.e. which has the potential to answer some questions as well as to open new inquiry directions.

IV.2.2 A naturalistic and interpretative research style

As echoed in the previous section, my study grows under the auspices of the qualitative-naturalistic inquiry tradition opened by Lincoln and Guba (1985). The emerging methodological approach highlights the fact that research itself is an act of interpretation, i.e. an accumulation of input from all the elements involved.

In this section, some of the features of naturalistic inquiry are discussed with direct relevance to the current study.

Particularly because this is a study of the (L2 mediated) *human* (learning) *experience*, the intention is to explore and understand, and only where appropriate to seek explanations (Lincoln and Guba, 1985). This study endorses the Vygotskian view of human experience as a dialectical entity, i.e. generated through contradictions and conflicts as opposed to linear growth and straightforward causality (1978). Consequently, it recognises the importance of employing a flexible and creative methodological approach in order to capture the interplay of these oppositional and uneven forces which drive learning. In this regard, the current study seeks to put to work sensitive, responsive and reflective research tools, all of which will be explained in more detail in the research design section.

One of the most prominent features of naturalistic inquiry is that it holds the *human-as-instrument* as a primary data-gathering instrument for a variety of reasons: sensitivity to the researched instances (ability to empathise); responsiveness (capacity to interact with the researched entities); adaptability (can collect data about multiple factors at multiple levels); holistic emphasis (humans are capable to grasp the overall meaning of a researched instance); knowledge base expansion (humans can deal with both propositional and tacit knowledge); and processual immediacy (people can process data as soon as this becomes available, and then make judgements about the course of action)(Guba, 1981; Lincoln and Guba, 1985). Although this study benefits

from a variety of research tools, the centrality of the investigator (human-as instrument) is due to all of the above listed reasons which can be translated in terms of the current study as follows:

- My experience as an L2 learner supported a good level of empathy with the researched students;
- There is on-going interaction with the students throughout the study even though sometimes in more direct (through scaffolded instruction) or more indirect (through in-built support in the provided materials);
- Although my attention at one time would be focused on one aspect (for instance, a student's progression with their understanding of a new concept this does not stop me from noticing other peripheral aspects but which can become important in the broader scheme of the project);
- My inquiry technique is adjusted accordingly in order to be able to relate to teachers, children and stakeholders (parents and management).

A second feature reminiscent of the naturalist type of inquiry is the recognition that *facts and theory are inter-dependent*, i.e. 'theories are underdetermined while facts are theory laden' (Hesse, 1980:188). In this respect, the study is both a theory-informed and an empirically based inquiry (Lincoln and Guba, 1985). On one hand, my initial and subsequent readings influenced the shaping of the theoretical frameworks proposed here. On the other hand, the categories identified in the analysis are very much data driven. There are, however, links between the empirically determined categories and the broader theories because however persuasive inductive analysis may be, it still remains 'inconclusive' if not elaborated on and networked into a conceptual framework (Lincoln and Guba, 1985:101). I did not start this project in the fashion in which grounded theorists (claim to) do, devoid of any theoretical influences (Glaser and Strauss, 1967). Rather, I tried to remain open minded throughout and adopted, to a great extent, a posture of *not knowing the unknown*, thus allowing the more or less anticipated findings to determine the course of the investigation.

A third naturalistic feature, tightly related to the above, refers to the *reliance on an emergent design rather than a pre-ordinate one* (Stake, 1975; Lincoln and Guba, 1985). Naturalism allows the research design to evolve as the investigation unfolds, rather than have an a priori established frame. In my study, the design takes shape as I progress with the further refinement of the

investigative focus which is largely obtained in light of a concurrent provisional analysis. This approach allows room for the consideration of many unforeseeable elements which may interact in unpredictable ways. For instance, the idea for the follow up interviews crystallised as I was conducting whole class observations and realised that I needed I to approach the learning event with more powerful, sharper lenses. Another instance illustrative of an emergent rather than pre-determinate design is the creation of the interview protocol. The initial rough guide of my follow-up interviews attains depth and structure, in great part, due to the respondents' input which is analysed almost cyclically until a more established interview protocol emerged that was then used in the main study.

Another characteristic of the naturalistic type of inquiry is a strong emphasis on the *gathering of raw data as it occurs naturally* with minimal intervention in the studied environment (Lincoln and Guba, 1985). Naturalistic ontology maintains that any reality is a whole and cannot be understood in isolation from its context; nor can they be broken down into parts as the whole is more than the sum of the parts. Although, one of the main research interests is to understand the children's progression with their understanding of new concepts, this exploration is not undertaken in isolation, i.e. in a sterile experimental set up. Rather, the follow-up interviews are conceptualised as an extension of the classroom based activities. In addition, my participation in the whole project as a teacher aims to reduce inhibitions and maintain an as natural as possible course of action in terms of learning activity.

Data gathering under the naturalist paradigm operates with great recognition of *the flexibility and potential of the qualitative tools* (Lincoln and Guba, 1985). These are considered appropriate for, adaptable to, and more revelatory of the human transactions as they are in fact 'extensions of normal human activities: looking, listening, speaking and reading' (Lincoln and Guba, 1985:199). For example, in my study, the use of participant observation, open ended and focused interviewing, and reflective research tools aims to yield rich data which can sustain a fine grained type of analysis. In addition, these qualitative tools employed here allow a steering of the direction of the investigation according to what becomes relevant and potentially revelatory.

A naturalistic exploration holds as central *a preference for a negotiation of the research outcomes* (Lincoln and Guba, 1985). Researchers in the naturalistic tradition hold the belief that understanding rests on negotiation of meaning

and interpretation. This study makes a point from corroborating observed and reported learning events. I regard *understanding* as a shared activity and, therefore, I find it essential to involve the perspective of those from whom the data has been drawn. In addition, I subscribe to a conceptualisation of understanding as an interpretive process not only when thinking about learning in general, but I also apply this to my research approach. Thus, I ensure triangulation of various research tools with cognisance of the fact that my investigative observations are interpretations influenced by various contextual factors or by my own system of beliefs. This is not to objectify my interpretations but to work with heightened awareness of the different interpretive layers.

The naturalistic paradigm rises in sharp contrast with the positivist perspective especially through a great *emphasis on the reciprocity of the research process* and, therefore, *the empowerment of the researched* (Lincoln and Guba, 1985). I too feel that, at times, respondents are in a better position to make sense of their own actions and that their voice should come through in any scientific investigation. I share a fairly strong belief in the children's potential to understand themselves and attach meanings to the world they constantly shape. In my study, the researched students remain in a central position not only as data producing subjects but also as young scientists perfectly capable to reflect on and articulate their own learning experiences (Alexander, 2004; Garii, 2007). In addition, the study incorporates both emic and etic perspectives (Fraenkel and Wallen, 2006; Taylor, 2001), which according to Bryman (2004) confers tactical authenticity to a piece of research.

Finally, naturalistic research is very much about generation of data as opposed to data collection. This means that a variety of elements which come into play are accounted for and the role of values in inquiry is also acknowledged. More precisely, context bound elements, cultural influences, systems of beliefs and individual personality features – they are all represented to varying degrees in the data set resulted from any investigative activity (Wellington, 2000). Besides identifying the participants' values and beliefs, equally important in a naturalistic investigation, is to uncover influences stemmed from the researchers' profile, level of involvement and potential biases. The following section, analyses in detail researcher positionality and bias, and discusses the respective implications for the current study.

IV.2.3 Researcher's role

I have made a recurrent point in previous sections about the status quo of subjectivity in human activity and, to a large extent, in research as well. However, this is not to downplay the importance of remaining aware of the nature of this subjectivity and the way in which it may project throughout any study. Two aspects with a certain impact on the making of the current study are going to be explored here: one is my involvement with the investigated context, and the second one refers to potential sources of bias stemming from my own background, beliefs and personality traits.

IV.2.3.1 Positionality in terms of involvement

Briefly put, this study essentially looks at learning as interactive process wherein involvement and participation become two of the key features. This determines me to position my observational actions more towards the participatory end of the continuum from complete participant to detached observer (Nunan and Bailey, 2009). I, therefore, assume a role of participant-as-observer (Gold, 1958 *cited in* Bryman 2004) most of the time in that I am a fully functioning member of the community - my identity and aims being known to my participants. In brief, I am definitely departing from a research fixation on objectivity and not making excuses for my level of involvement as a researcher; I am instead affirming and assuming membership (Angrosino, 2005).

By becoming a participant observer as opposed to maintaining a safe distance (safeguarding the so called absolute objectivity) the intent was to lend more support to a natural course of action during my research project. Such a course of action is recognized in the literature on qualitative research to sustain the generation of less distorted data, i.e. somewhat comparable to data emerging from learning interactions outside observational constraints.

It needs to be acknowledged though that any observational investigation bears a certain level of reactivity, and, therefore, the observed behaviours are likely to be slightly changed by the presence of an investigator (Moyles, 2002). Nevertheless, particularly because of my prior teaching experience in schools in the same area with students of similar age and level, and also due to my identity as a Romanian teacher of English, it could be argued that my

involvement does not impact on the dynamic of this learning environment to an extent to which it would produce artificial or simulated data.

Another risk from prolonged immersion in a researched community, or from assuming a posture of indwelling (Maykut & Morehouse, 1994), is described as *going native (*Gans, 1968 *cited in* Bryman, 2004). This implies that over-familiarity with the research context and the members of the investigated community may cause the researcher to become wrapped up in the view of those whom they are researching. I do assume membership as a fully functioning member of this community for the duration of my study, without subscribing to their values and perspective (Alder and Alder, 1987).

A further aspect related to my level of involvement and which needed careful consideration relates to my dual role as teacher and researcher. Whilst this involvement (as participation) contributes to a natural unfolding of the learning activity, deciding to work from both perspectives has certain implications.

Given my level of involvement a high proportion of the generated data had to be captured on video in order to allow further opportunities for analysis. In order to be able to assume both perspectives, I had to employ a kind of time triangulation (Denzin 1970 *cited in* Bryman, 2004) whereby I revisited my analytic notes at long intervals of time in order to be able to attain detachment from my initial observations. On a practical level, I made sure that the teaching time was evenly interspaced, with time off teaching (research days) in order to allow time to step out of the teaching role and focus on my role as a researcher. Finally, especially the CLIL teacher but also the class teachers helped my work a great deal with various aspects of teaching and follow-up feedback.

IV.2.3.2 Uncovering potentially biased views

The human-as-instrument may display the naturalness and flexibility emphasized in the previous section, but is by no means an infallible instrument. Besides those risks related to the researcher's level of involvement exposed above, there are also a set of potentially influencing factors about which any ethnographic researcher needs to be very transparent. These factors may be less obvious and are related to the

researcher's knowledge, beliefs and background, all of which can be a source of unintended bias.

I would like to clarify at this point that what has been referred to, in the previous sections, as the epistemological and ontological stance assumed for the overall study, represents an investigative stance arising from the dynamics of all the participants and elements involved in the whole process. In what follows, I shall provide a brief account of some of my educational beliefs which, I feel, may have influenced this study.

The incompatibility between the values from my early instruction and those encountered in my later education seems to have left me trapped between two worlds on certain levels. Without going into tremendous detail of the narrative kind, I shall point out that my primary and secondary school years involved straightforward schooling in a communist Romania with clear cut rules and blind faith in the delivered knowledge. This comes in stark contrast with the educational path which opened up for me after the fall of the Berlin Wall.

This dramatic historic change shook to the core my relation with the authority of knowledge. After so many years of unquestioned authority and hard core realism my first instinct, as with any ideological radical transformation, was to sway towards the opposite extreme (DeBono, 1983), and find comfort under the umbrella of a postmodern relativism. A certain degree of ambivalence, however, arose as a result of this sudden shift from 'the egalitarian utopia, the sole universal truth, and Marxist-Leninist ideology' (Ulrich, 2008:173) to critical inquiry and multiple realities. On one hand, there is a tendency to find shelter under the safety of established theoretical traditions; on the other hand, my more instinctual self seeks to challenge and innovate.

As far as I am concerned, sometimes an internal conflict arises between maintaining a relativist view of the world but at the same time pursuing a critical way of knowing. While a relativist perspective endorses subjectivity, critical inquiry makes claims of objective scrutiny which relies on factual evidence. I find a subjectively conceptualised world genuinely convincing, but I choose to define criticality in terms of acknowledging multiple perspective rather than striving for objective evaluations.

Another, personal belief which is echoed in my project regards my faith in children's great intellectual potential which deserves the right developmental

opportunities. This comes from my perceived unfairness of the educational system in Romania. For instance, over the past 20 years, repeated attempts on the part of the Ministry of Education to depart from the more traditional type of education more often have displayed features of confusion and uncertainty as opposed to features of progressive education. Students are those who seem to be missing out the most because of this unfruitful experimentation. This, for me, has opened the door to reflections around how to foster cognitive growth rather than school children in a prescriptive way, how to best understand the children's learning so as to be able to make judgements as to what is relevant, and how to facilitate for children ownership of their own learning. Questions of such nature determined me to bring together reflective classroom practice with research based enquiry.

In spite of my oscillations or strong beliefs, I took certain steps to audit my research actions and thus minimise biased influences. I collected data from various perspectives and used a variety of formats (diary, informal conversations with all involved) in order to reflect on my own preconceptions and interpretations. In other words, I sought to minimize my biases through an enhancement of my criticality of the whole process. This critical reflection is referred to as *'disciplining subjectivity'* (Denzin, 1970 *cited in* Wellington, 2000), or enhancing *'reflectivity'* (ability to reflect on others) and *'reflexivity'* (ability to reflect on the self) (Hammersly & Atkinson, 1983).

In summary, I could define myself as a theoretical, methodological and interpretive *bricoleur,* eclectic in places, but who shows commitment to transparency and criticality. I

- borrow ideas from different disciplines (sociology, psychology and education);
- try to bring together tools in an innovative way (e.g. semi-structures interviews and the microgenetic method);
- understand the whole process is an interpretive one (which rests on interaction and is shaped by all participants' personal history and intellectual profiles);
- explore competing or overlapping paradigms (socio-cultural and cognitive-constructivist) ; and
- engage in a fairly wide range of tasks spanning from interviewing to intense self-reflection and introspection.

(Based on Denzin and Lincoln, 2011:4)

IV.3 THE RESEARCH DESIGN

In the opening section of the Methodology chapter, I have provided almost a narrative account of the stages involved in this research project. The second section has focused on unpicking its ontological and epistemological underlying assumptions, in addition to highlighting those features of the naturalistic paradigm which are more relevant for the current study. This third section proposes conceptualising the study as a case study, brings into focus sampling considerations and proposes qualitative tools which would capture the learning phenomenon from angles and with a degree of depth needed in an explorative type of inquiry.

Before moving on to analyse the research design employed here, one point needs to be reiterated. The design of this study comes as a result of a process of moving backwards and forwards between theory and field work. In other words, the sampling procedure and the investigative tools have been established both in light of readings on methodological implications of investigating classrooms (Nunan and Bailey, 2009; Seedhouse, 2004) but they are also shaped by the investigative needs sprung from the researched learning instances.

IV.3.1 An explorative case study design

The methodological flexibility that case studies bear, and the insight they can yield recommend them as appropriate designs to investigate classrooms as complex multifaceted learning environments. Traditionally, case studies embody the investigation of well delimited settings or communities. My intention here is to tailor a case study which foregrounds a phenomenon (the L2 mediated learning experience) and not a setting (the Romanian primary school). In the Introductory and Context chapters, three layers of context are proposed on a continuum from the individual-in-action (micro-level) to the immediate community (meso-level), and then to the broader social picture (macro-level). Here I do not follow a continuum from the individual to the social collective. Rather, I follow a continuum from what is more immediate and relevant for the learning instance, to layers that are more remote but still with potential to shape the learning event.

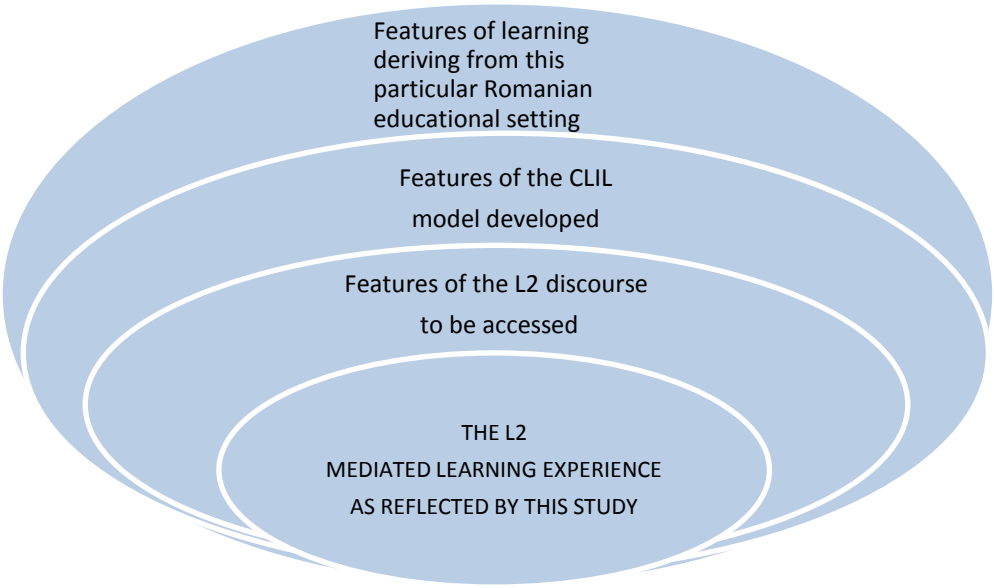

DIAGRAM 4: Extending boundaries in a case study tailored around the L2 learning experience

Diagram 4 represents a type of case study which places the investigative lenses on the L2 mediated learning experience as it manifests itself within the boundaries of a particular CLIL model, but also as it is shaped by the features of the respondents and by other contextual elements. For example, if the phenomenon under examination is students' employed strategies for accessing L2 mediated discourse, then several elements can be considered.

i. The features of the L2 discourse to be accessed
   - Genre and types of texts (cognitive and social) (Bruce, 2003)
   - Access channel (written, oral)
   - Level of linguistic and conceptual difficulty

ii. The features of the CLIL model developed
   - The balance between linguistic and conceptual focus
   - The nature of the set task (authenticity/ relevance/ clarity/ usefulness/ familiarity/ motivational impact)
   - The learning mode (scaffolded or student-sustained; peer assisted/collaborative or more independent)

iii. The features of the participants
   - Personality traits
   - Roles assumed in their learning community
   - Family influences

iv. The features of the immediate learning environment
   - School ethos (whether support is given more to creative or guided type of learning)

v. The broader socio-historical picture
   - Romanian learning traditions and practices

It needs to be noted that whilst all of the above, and maybe more, come into play to constitute the environment of the learning experience, not all of these are always possible to tease out. Van Dijk (2008) cautions about the regressive layers of context one can identify and advises that it is only possible to fully consider some.

This variety of contextual elements can interact at a particular time, with a certain force and shape the learning instance in a unique way. This line of thought suggests that each learning instance is the result of a unique/ non-replicable combination of contextual elements. A conceptualising of learning instances, as unique occurrences, brings certain limitations in terms of extrapolating and generalising.

Thus, this study is not intended to offer generalisations across Romanian primary school populations; nor does it aim to determine and postulate universals of human learning. Instead, through this case study, I argue for

the value of context-bound/ concrete case knowledge and its potential to allow new and localised theories to emerge. Flyvbjerg (2011:305) comments that *'Formal generalisation is overvalued as a source of scientific development, whereas the "force of examples" and transferability are underestimated'*. In a similar vein, Ragin (1992:225) observes that *'small N qualitative research is often at the forefront of theoretical development'.*

The literature provides a core set of features of the naturalistic case study, some of which can be traced down in my project too. Usually, an explorative case study is

- an instance defined by boundaries (Yin, 1994);
- context-bound (Miles and Huberman, 1994);
- intensive and holistic (Merriam, 1998);
- flexible, i.e. can accommodate innovative investigative designs (Yin, 2003);
- a mixture of description, inference and interpretation (Nunan and Bailey, 2009);
- a systematic and reflective documentation of evidence (Sternhouse, 1985:50); and finally,
- a potential source of *analytic* generalisations (Stake, 1995 and Yin, 2003)

Based on those features more prominent in my project, I would class this study as a longitudinal exploratory and educational case study. Exploratory - because it aims to gain insight into students' thinking tactics while handling content in L2 in a CLIL setting. Longitudinal -because the whole project (pilot, main data collection stage and follow-up visit) spreads over approximately three months, which in the time frame of a PhD project constitutes a significant amount of time spend on field work. Finally, this is an educational case study (Nunan and Bailey, 2009; Bassey, 1999) because it is undertaken with the intention to inform CLIL pedagogy and practice, but also because the overall research approach is conceptualised as *collaboratively learning about learning*.

IV.3.2 Sampling

In the Context chapter, a description of the school and participants' profiles has been provided. Here the sampling procedure and its implications become essential.

It can be argued that this is primarily a convenience sample (Bryman, 2004; Wellington, 2000) in that the study was undertaken in a school whose staff expressed interest in my project and with students (and parents) who were fairly enthusiastic to participate. In other words, although in the preliminary stage of this project, I launched the proposal to a variety of schools and explored other possible collaborations, I settled for this particular school mostly because of their positive reception, the English teacher's previous expertise with the CLIL approach, the easy transportation access to school, and safe storage for all the electronic equipment throughout the duration of the main stage of the field work.

There are, however, other features of the sampling process which on analysis, point towards different types of samples.

The fact that the school management and the CLIL teacher expressed interest to participate in my study makes the sample (the school as a whole) a self–selected sample (Bryman, 2004). However, this applies only to some extent as the selection of the school was not decided solely on grounds of them offering to partake. The fact that this is a mainstream school with mixed ability students, representative for possibly half of the urban schools in that area also contributed to my selecting the school. From this angle, this can be classed as a typical sample.

Furthermore, the students' participation was determined by my research focus (KS2 age students with limited English), and again I was interested in the average or typical students, I did not have an interest in the extreme cases. Therefore, the participating classes (Y3 and Y4) constitute a purposive typical sampling.

Student representation in interview participation is also important to explain here. I welcomed all students from the two classes involved in the project in my follow-up sessions in order to avoid upsetting students as many of them were fairly keen to be part of the follow up interviewing process. However, as I went on with the interviewing and the class observations, I selected for analysis over half of the participating students from either class. For example,

if out of roughly 22 students per class, 18 offered to be interviewed I ended up keeping about 14 interviews. Two main criteria of selection were considered here. Firstly, based on student profiles provided by the class teachers and the CLIL teacher, I aimed to have a range of students representative of all levels of academic and linguistic ability. Secondly, I made the selection based on students' displayed learning behaviour during the main lessons. Thus, I made sure to include some people who seemed fairly confident, some students who appeared to cope well but I also ensured to have representatives from the more hesitant or the quieter ones. Cohen and Scott (1996) comment that especially when one considers learning strategies, which are in great part mentalistic and not behaviouristic, the researcher needs to make sure that not only the outspoken and the extrovert should come prominently in the collected material but also other types of temperament should be represented. This way of approaching sampling is specific to the naturalistic type of inquiry and is reminiscent of the *theoretical* (Glaser and Strauss, 1967).

In summary, according to Patton (1990) who identifies several types of sampling in the naturalistic type of research, my sampling seems to be a combination of the following: convenience (as it primarily relies on willingness to become involved and on gaining a fairly good level of access); typical cases (this does not concentrate on extremes cases such as special learning needs people or challenging social behaviour pupils, but it concentrates on an urban relatively well ranked school which is representative of possibly half of the urban schools in this area). Finally, and probably most importantly, this is a type of sampling which is aimed at maximising information rather than facilitating generalisations. In other words, although there were some initial theoretical guidelines there was no a priori specification or fixed agenda. This allowed for a continuous adjustment of the sample, based on information extracted from the emergent data rather than on statistical consideration. A sample shaped in this fashion can potentially develop categories which may lead to emergent theory.

IV.3.3 The research methods

In brief, the study employs: observation, interview, and field work documentation, each of which come with a subset of tools.

The study involves mostly participant and some non-participant observations, if researcher involvement is the criterion. Other types that can be distinguished here are direct observations of tasks in progress during lessons and individual interviews, and also recurrent observations of the video material.

As far as interviewing is concerned, the study comprises two focus group interviews, a semi-structured interview with the CLIL teacher, and a series of individual interviews which started off as open ended but which gradually became more structured.

Besides observation and interviewing the study also benefits from additional research tools such as the teacher's log, researcher's diary, work produced by the children, feedback from the main class teachers, and some informal field notes and feedback from parents.

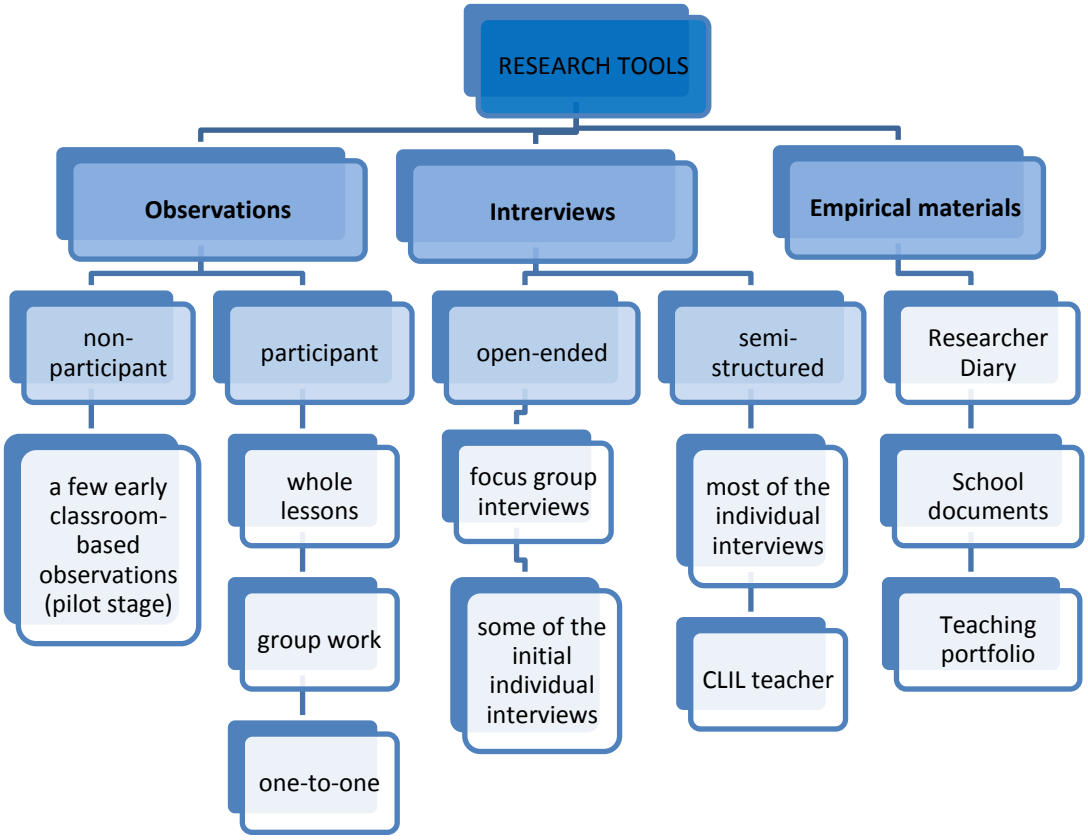

DIAGRAM 5: The main research tools and techniques employed in this study

The diagram offers a simplified listing of the research methods employed, and therefore, two aspects need to be made more explicit here. One refers to the shift from non-participant to participant observations made in the early days of the pilot work. To this it needs to be added that all participant observation is consistently backed up by video recordings. The other aspect regards a progression from fairly open ended interviewing to a more structured frame which went hand in hand with the refinement of the research aims.

A brief mention is worth here of the crucial importance born by the tools selected to document classroom life as these tools determine to a large extent what becomes visible to the analysis and how the researcher is likely to interpret what they can see (Nunan and Bailey, 2009).

In what follows, I shall highlight only those features of the above outlined research tools in terms of relevance for the current study. Next, the complementary relation between these tools, more precisely, how they are corroborated is discussed in a section on triangulation.

IV.3.3.1 Participant observation and methodological considerations of researching on-line classroom-based learning

This section briefly looks at the notions of participation and observation and highlights an epistemological constructivist understanding of how these two can merge into an investigative tool. Next, it looks at kinds of observation undertaken in this study by considering criteria other than researcher involvement. Finally, this section discusses some of the methodological implications of making use of audio-video equipment in researching classrooms.

Observation is defined as 'the fundamental base of all research methods' in the social and behavioural sciences (Alder and Alder, 1994:389), and is regarded as, perhaps, the most common method of documenting classroom activity (Nunan and Bailey, 2009)**.** Observation becomes central in this project particularly because this study is a process oriented one.

Traditionally, observation and participation exclude each other, to a large extent, as they are regarded to be underpinned by objectivity and subjectivity, respectively. In the more modern acceptation of reflexive

practice, the key becomes to strike a balance between the two. In other words, researchers are understood to assume a certain degree of subjective immersion while at the same they are expected to still maintain a scientific focus (*ibid*). In this study, observation does not come to objectify the participatory actions; rather they form a unity as an investigative tool (participant observation). This tool aims to take the researcher closer to the investigated phenomenon in a less intrusive way so that learning instances comparable to those which occur outside any observational constraints are witnessed.

If researcher involvement is considered as the main criterion of categorizing the types of observation in this study, then participant observation can be considered the main observational tool. However, if other criteria are followed, features of other types of observation become also apparent. Before moving on to examine these other types of observation, it needs to be clarified that observation extends over both whole class lessons and follow-up interviews.

One distinction which can be made here is between direct observation of learning events and post observations of video recordings of the learning events. The former, refers to those instances when I acted as a teacher assistant in classroom based lessons, and had the possibility to make notes. It also includes an on-line observation of tasks in progress during the follow up interviews, which produced immediate reflections. The latter, refers to an enhanced analytical observation of the videotaped material; an analysis which was undertaken at different times throughout the course of the project. Firstly, there were immediate observations of recorded lessons from the pilot and the main study, which helped with the refinement of the research aims and the adjustment of the investigative tools. Secondly, once the focus and the tools were contoured, there was an on-going type of analytical observation of the video-taped material which can also be classed as focused observation or as early stages sorting of data. Finally, this is followed by the end-of-the-fieldwork analysis where this analytic type of observation virtually metamorphoses into systematic analysis.

In this study, observation does not remain a tool solely at the researcher's disposal. Students also make use of observations of instances from videotaped lessons as part of a stimulated recall procedure which is going to be explained in more detail in the following section on interviewing. What is

interesting to note here is that whilst these observations were intended to a large extent to prompt the students' memory, they also worked as a metacognitive booster, i.e. as a tool to explore their own learning and heighten their awareness of their learning actions**.**

Besides an exploration of the notion of participant observation, it is essential to look at some aspects related to employing audio-video electronic recording in parallel with the above described types of observation. I shall not go into details about the more obvious aspects such as possible practical problems (planning, handling and powering the equipment – see Bailey's 1986 re-visitation of Murphy's Laws for a detailed account on such aspects). I shall only make a couple of points regarding the use of technology which appear to have more weighting for the current study.

Because of the involvement of the researcher in the teaching side of the project it became vital to have means to electronically capture the students' learning activity. Thus in each lesson there would usually be two cameras, one capturing the overall activity of the classroom and one focused on a group of 3 to 4 children (sat around a table) and pointing at an angle to capture as much as possible from the children's activity. This was complemented by a digital voice recorder which is acoustically more accurate than a video-camera. The use of these two recording devices in conjunction enabled me to reconstruct fairly complete and precise transcripts. The transcripts, in their turn, laid the basis for a fine-grained discourse oriented analysis which is going to be explained in detail in the following chapter on the analysis framework.

Both observation and the existence of cameras dotted around a classroom can be intrusive for the learning activity in at least two ways, especially when young children are involved. On one hand, the equipment and the on-going observation can inhibit children; on the other hand, particularly the technological gadgets to which they may have easy access, may be an incentive for play or even mischief. In this project, from the early days of the pilot work, students were given a chance to acclimatise themselves to the equipment, which minimized the intrusiveness of the equipment significantly but did not eliminate it altogether.

Based on the above, it can be said that capturing learning in a classroom environment requires a flexible and creative approach towards the proposed investigative tools. For instance, observation emerges here as a multifaceted

tool in that it is used from different angles and in the hands of different actors. The use of participant observation in conjunction with audio-video electronic documentation enables a kind of observation which departs from the more traditional 'observation schemes' which were looking for patterns (Nunan and Bailey, 2009:270). Rather, in the current study, observation moves towards a more responsive kind of observation, and a more holistic or discoursal framing of the learning activity.

IV.3.3.2 Interviews and methodological implications of involving introspective methods

This section looks in detail at the interviewing technique employed particularly in the individual follow-up interviews with the students. It also explains the setting up of the focus group interviews (Y3 and Y4 students) and the end of the project interview with the class CLIL teacher. Before proceeding with the above, an explication of the conceptualisation of interviewing which underlies my interviewing method and contours my role as an interviewer needs to be explained.

As with observation, interviewing is conceptualised from a constructive epistemological perspective which regards meaning as co-constructed. Thus, the interviews here embody a reflexive method rather than a standardised one, which points towards the ethnographic research tradition. In other words, the way in which interviewing is set up in this study suggests that this interactive and dialogic investigative tool does not simply gather information or extract data but it produces knowledge (Hammersley and Atkinson, 1983; Denzin, 2001; Rapley, 2001).

This view impacts on the roles I assume as an interviewer with, of course, some flexibility between the different types of interviews employed. For example, I act as 'a sponge', 'a listener' particularly in the focus group interviews where I want to allow what is relevant to the students to come to the fore. I take on the role of a 'a challenger', or 'a prompter' particularly in the individual follow up interviews where the aim is to tease out students' metacognitive reflections. I also act as 'a sharer' in the end of the project interview with the CLIL class teacher (Wellington, 2000:72). All of these roles reflect the interplay of *emic* and etic perspectives as I negotiate a balance

between structure and flexibility and between knowledge and evidence in order to capture both participants' representations of the investigated phenomenon and my own understanding of it as a researcher (Kvale, 1996; Gillham, 2000).

The follow-up individual interviews

There are 57 follow-up individual interviews undertaken with 15 Year 3 students and 14 Year 4 students. The interviews are evenly spaced out throughout the nearly 2 month duration of the main study; each child is interviewed three times on average, with the interview length of approximately 10 minutes.

Each interview follows a three part protocol, each part with varying degrees of openness. In the first part, the students are invited to reflect on the CLIL model as a whole but they are allowed the freedom to choose to talk about what they feel is relevant to them. The second part concentrates on instances from lessons and makes use of stimulated recall technique. More precisely, students are asked to watch certain extras from the lessons in order to explain and further explore some of their learning behaviours. Finally the last part, students are asked to engage in tasks similar to those from the class based lesson and upon task completion give their immediate reflection on the strategies employed.

The first part of the interview is a typical open-ended section as described in literature on interviewing from the social sciences. The main aim is to tease out relevant aspects from respondents as opposed to imposing my own agenda or categories. This first part of the interviews underwent a straight forward analysis for categories and themes. Some of this analysis occurred during the main stage field work and, therefore, it fed into our reflections on the progression of the teaching side of the project. Subsequent analysis of the data from this opening part of the interview yielded a series of categories which reflect the students' perception of the evolving CLIL model. Some of these categories - substantiated with quotes from students' comments have been used in the Context chapter where the CLIL model and the teaching arrangement have been explained.

With the second and the third part of the interview, I turn to the literature in psychology on using stimulated recall and immediate retrospection in the

frame of an interview. The intent is to depart from the more traditional type of experimental interviewing practised under the internalist paradigm in cognitive science and move towards an ecologic kind of psychological investigation. The interviewing approach here is largely influenced by the idea that 'observation and experiment must enact as a developmental microcosmos' and is to some extent similar to what Vygotsky describes as the genetic method (Frawley, 1997:92).The goal of this kind of interpretive experimentation is to witness on-line growth of understanding and even to act as a catalyst of development rather than merely record it or 'take the temperature at a certain point' (Wertsch 1985b:54-57 *cited in* Frawley, 1997:92).

The crux of the matter here lies in working with a recognition of the fact that most of the elements gravitating around the setting up of such 'experiments' will reflect into the provoked-generated data to varying degrees. The internalist paradigm strives for detachment from the respondent and pursues the idea of untainted accounts. Those researchers pledged to cognitive science tend to set the task, give all the instructions, offer the materials, allow their subjects to think about tactics, and only then the actual solving of a problem is recorded. Under the socio-constructivist view assumed by this project, the rapport between the respondent and the interviewer and the interaction between the respondent and the task at hand, the learning environment, and the materials as such are very important (Frawley, 1997:93).

In what follows I shall further discuss some methodological implications arising from employing introspective tools such as stimulated recall and immediate retrospection.

Generically known as verbal reports (Kasper, 1998; Cohen and Scott, 1996), these introspective methods have met with criticisms particularly regarding validity problems. As illustrated elsewhere (Hawker 2013), the following are some examples of such criticisms which are provided here alongside explanations of how they are addressed the current study:

- The inconvenience of interrupting the natural flow of a lesson or task in progress in order to tease out thought processes (Gass and McKey, 2000 *cited in* Nunan and Bailey, 2009) (In the third part of the interview I avoid the use of think aloud protocols; I allow my students to complete their tasks and only then I ask for their reflections. The

use of stimulated recall, in the second part of the interview, enables the documentation of classroom activity without interrupting its course);

- The likeliness of an obtrusive and unnatural learning experience because of having people to verbalise their thoughts in interview settings (The content of the tasks is adequately contextualised in the classroom based activity, and the class teacher role of the researcher contributes to a reducing of the levels of anxiety, and thus permits naturally occurring learning instances);
- The probability of incomplete or semantically imprecise metacognitive accounts when expressed through L2 (L1 is used in this part of the study);
- The possibility of a critical time gap between the task-related mental operations and the reporting phase, which can result in unreliable data (Nisbett and Wilson, 1977; Brown and Rodgers, 2002) (Immediate reflection is used here as opposed to think aloud protocols or delayed retrospective accounts);
- A likelihood of children having difficulty with verbalising such complex phenomena (These students are highly articulate in L1 both grammatically and conceptually - other studies report students as being capable of accurate and insightful accounts – Garii, 2007; Child, 2004); and, finally,
- The possibility of dishonest accounts because of a tendency on the part of the children to comply under the assumption that the researcher has certain expectations (Cohen, 1998) (Interviews have been repeated and consistency checks have been undertaken. In addition, the students' early awareness of the researcher's interest in improving the teaching methods prevents students from feeling evaluated or striving for clever answers).

Although verbal reports have met a great deal of criticism, some would argue that these can be very revealing about on-line learning in general (Cohen and Hosenfeld, 1981; McKay, 2006:60-67), and the dynamics of comprehension in particular (Pressley and Afflerbach, 1995). Nevertheless, one needs to remain aware of the fact that what is being teased out is the participants' representations of the investigated phenomenon as opposed to a straightforward mapping of cognitive processes, what is obtained is 'not immediate revelations of thought processes undergoing in students' heads,

rather they represent a subset of the information currently available in short term memory, which implies that these cognitive processes are not directly manifest in protocols but have to be inferred just as in the case of other type of data'(Kasper 1998:359).

Reliance on the respondents' perception has been described as a research approach indulging in shared assumptions, a form of 'folk psychology' (Lyons, 1986; Dobrin, 1986 *cited in* Cohen, 1998). This discussion of whether the accounts provided by participants, subjective as they may be, can be accepted as valid or scientifically reliable takes us on to a more philosophical debate of epistemological belonging. If one subscribes to the idea of enabling our participants to gain ownership of their own learning, then, one can come to terms with the 'reality' that there is no lesser scientific truth in what a child reports about their own learning experience.

Focus group interviews

Both focus group interviews last approximately 40 minutes and are conducted in the last week of the main stage field work in my presence with the support of the CLIL teacher. The interviews are organised with the Y4 and the Y3 classes separately and include all the students who participate in the project. They are conceived as open ended interviews; the idea being to stimulate a relaxed discussion about the learning experience in this project. While the first part of the follow-up interviews teases students' perception of the CLIL learning experience as individuals, in this type of interviewing set up enables students to air their views as a group as well.

The interviews are conducted in Romanian and the class teacher and I acted as listeners and moderators as we tried to interfere as much as possible with what students have to say. During these interviews students seemed to be interested to offer feedback on the overall CLIL model developed, they tended to make comparisons between their CLIL lessons and EFL lessons, they provided comments regarding the level of difficulty and the usefulness of our lessons, and finally they made some observations about transferable knowledge and skills across the curriculum.

CLIL class teacher interview

This interview follows a protocol which mixes open ended sections with more semi-structured ones, it runs for approximately 50 minutes and is conducted in English. Although this is intended as a fairly informal end of the project collegial conversation, it still follows a rough interview protocol as it aims to cover certain areas as well as to allow the emergence of unanticipated aspects. Some of the covered areas are as follows: cognitive engagement and the balancing of content and language, material design, syllabus and lesson planning, teaching styles, CLIL specific learning goals, and teacher development.

IV.3.3.3 Other tools: teaching portfolio, school documents and researcher's diary

The teaching portfolio is kept in conjunction with my CLIL colleague, and it contains the syllabus of the taught World History module, lesson plans and sketches, samples of designed materials, some samples of students' work and weekly reflections on teaching, materials and students' performance. Besides its value as a reflective tool for teaching, a portfolio becomes essential later on in a research project when data needs to be sorted and analyzed as it can act almost a referencing tool.

The researcher's diary contains on average three entries per week (usually written down on those days off teaching) but on occasions, of necessity, daily notes are kept. One of the most important roles this tool is to document research decisions and changes so as to be able to track down how these shape the broader methodological framework. In addition, a diary is a good means of recording immediate reflections of unexpected occurrences or critical incidents (Tripp, 1993), both positive and negative ones. It also enables later reflection on initial reflections which means that it allows the researcher to rise to a different level of criticality.

Access to documents such as curricula, examination results and reports, and student profiles can be a significant addition to the array of tools for any school based research. Not only does this enable one to plan their research actions with a sufficient understanding of the researched context, but it can also support considerably later analysis in terms of drawing inferences and seeking explanations.

IV.4 SCIENTIFIC TRUSTWORTHINESS

This section shoes how the design described in the previous sections translates into a corroborated observational, dialogic, introspective and reflective research method which. I shall then argue following Lincoln and Gubas' now classic qualitative research criteria that the research method developed in this study secures its scientific trustworthiness (1985:189-219). Credibility, transferability, dependability and confirmability points have been echoed in previous sections but in this closing part of the methodology chapter they are synthesised made more explicit.

Based on the a priori provided description of the research tools, it can be seen that my investigative method comprises an observational, a dialogic, a reflexive/introspective and a reflective component. In other words, learning is investigated by both the researcher and participants through active noticing, contemplation, self-reflection, and dialogue. In simple words, the whole methodological process here is about watching, thinking to the self and in conjunction with others.

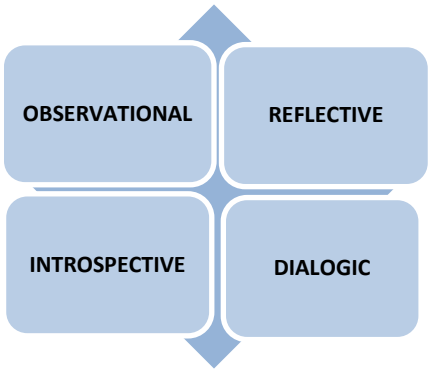

DIAGRAM 6: The matrix of the research method (Components)

IV.4.1 Credibility

IV.4.1.1 Ensuring the credibility of the generated data, the inquiry process and the proposed findings

The credibility of the generated data can be ensured through operational techniques such as prolonged engagement, persistent observation and triangulation (Guba, 1981).

Sufficient time is devoted in this study to develop an understanding of the researched context, to detect distorted accounts and interpretations, to develop trust based relation with the investigated community, and to capture unexpected events. Then, on-going observation is maintained in order to identify those elements most relevant to the phenomenon under investigation. While 'prolonged engagement' increases the scope of an investigation, 'persistent observation' adds depth to it (Lincoln and Guba, 1985:304).

Triangulation is acknowledged in qualitative research as a powerful means of conferring credibility.

Identified as the least obtrusive research means, observational and dialogic techniques, confer a fairly high level of triangulation when used together (Lincoln and Guba, 1985:24; Bryman, 2004). Gillham (2000) notes that the relationship between the accounts of behaviours (self-perceived behaviours), and the actual (observed) behaviours is not always a straightforward one. Fraenkel and Wallen (2006) also observe that interviews are an important way for a researcher to check the accuracy of the impressions gained through observations. Similarly, observations can confirm or contradict accounts offered by respondents. In psychology, ecological researchers have placed great emphasis on observation (ethomethodological tool) as triangulation for participants' accounts (Potter and Wetherell, 1987).

On one hand, in participant observation unlike in the case of the interviewing, due to a prolonged immersion the researcher is better equipped to notice, has more chances to empathise with the researched environment and acquires a firsthand understanding of the context under investigation. In addition, observation allows the inclusion of other modes of expression in the analysis unlike interviewing where the analysis tends to largely rely only on the linguistic expression. Furthermore, there is a naturalistic emphasis in

encountering the respondents in their natural environment which cannot always be guaranteed even in least structured interviews.

On the other hand, interviewing has the power to tease out what eludes observation as there are many aspects of the learning phenomena resistant to observation (Wellington, 2000). Even though one may be tempted to believe that collaborative learning is about displaying learning behaviours and therefore an observational tool may be sufficient, in fact, this would offer only half the picture. There needs to be achieved a significantly deeper level of exploration of these learning phenomena drawing on the respondents' accounts to gain a real insight (Fraenkel and Wallen, 2006).

In addition, the introspective techniques and reflective tools appear to interact well with observational and dialogic techniques.

For example, stimulated recall and immediate reflection can provide some explanations for already observed behaviours, or can prompt subsequent observations. Similarly, dialogic exploration of one's learning enhances the depth and value of cold observations. Furthermore, the researcher's diary makes an effective *reflexive* tool (Wellington, 2000); a space for the investigator where they can uncover own biases and where they can ponder over and adjust their own research decisions as the process unfolds. Similarly, teaching portfolios used in conjunction with informal peer observations and collegial critical discussions feed into the shaping the CLIL model and indirectly, to some extent, into the nature of the data generated by the study.

Depending on the exact item under investigation, the research method matrix proposed in the introduction of this section translates into a juxtaposition of different investigative tools whose synergy is illustrated below.

For example, if the investigative lenses are set on the students' classroom based strategies, the research method matrix becomes:

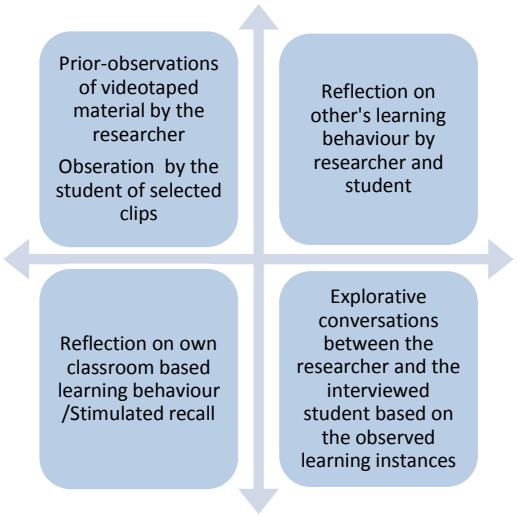

DIAGRAM 6a: Research method matrix (Students' classroom-based learning interaction)

Similarly, when the matrix is applied to examine student interaction with the task at hand, the investigative arrangement takes the following form.

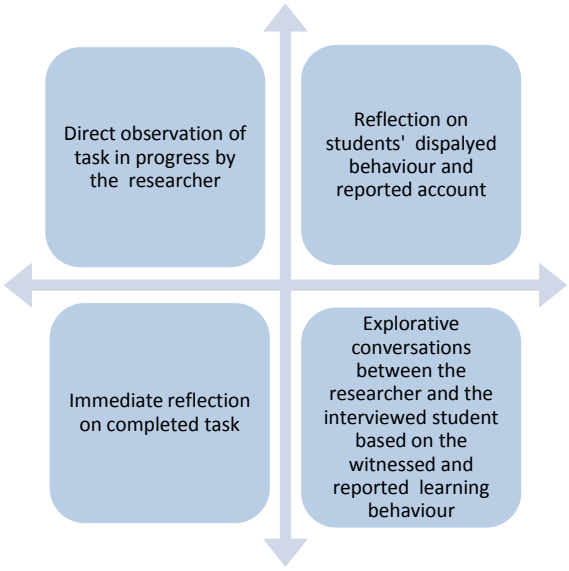

DIAGRAM 6b: Research method matrix (Students' interaction with the task-at-hand)

IV.4.1.2 Maximising the credibility of the researcher's investigative judgements

The credibility of the researcher's investigative activity is achieved through triangulation of tools like in the following example where the researchers' interpretation of video material is under scrutiny. In other words, the diagram below illustrates the tools on which I draw as a researcher in order to validate my analytical observations.

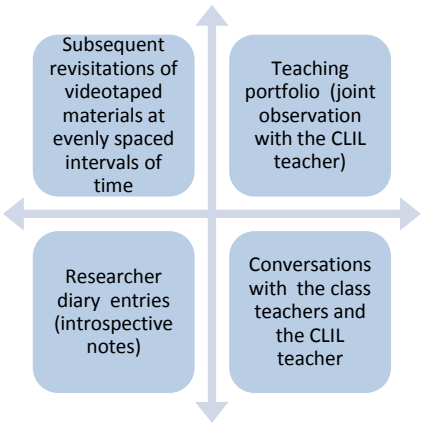

DIAGRAM 6c: Research method matrix (Maximizing the credibility of the investigative judgements)

The researcher's investigative line can also be substantiated through triangulation of multiple viewpoints. External checks on the inquiry process are performed with people of varying research expertise.

Firstly, my supervisors have questioned where appropriate some of the interpretations I attached to some of the analysed materials. For example, in the supervisions from the second year into my PhD I presented video materials and the corresponding scripts and sought feedback on my interpretations. Secondly, time and work load permitting, some samples of analysis have been re-analysed by a fellow PhD student with expertise in CLIL. On a broader picture, this project has also benefited from observations following conference presentations. Finally, but equally important, some of my views are challenged at times by the school CLIL teacher. Besides the collaborative teaching work undertaken with the class teacher, I used her as an audit for some of my research actions ('peer debriefing' in Lincoln and Guba's terms). In addition, by checking some of the provisional findings with her, and the children, this study seeks member validation.

IV.4.2 Transferability

As mentioned under the case-study section, this project departs from the idea of pursuing grand generalisations. Rather, as most naturalist researchers, I aim to set forth a working hypothesis together with a description of the context and the time in which this hypothesis holds. Simons (1980) writes about one particular strength of the qualitative inquiry in the form of educational case studies whereby 'through the portrayal of a single instance locked in time and circumstances, [the researcher] communicates enduring truths about the human condition' (1980:1 *cited in* Bassey, 1999).

The key word here is description; more exactly, a description defined in terms of transparency, detail and clarity. This type of description which can facilitate transferability is coined by Geerts (1973) as 'thick description'. My intention is to offer a study with an adequate level of accessibility. This means to offer potential appliers a sufficient amount of detail to enable them to make appreciations as to the possibility of any transferability in light of their knowledge of their own contexts. Such conceptualisation holds ground much more than placing myself in the position to extrapolate from the position of knowing only 'the sending context' (Lincoln and Guba, 1985:297).

Within the naturalistic tradition, researchers consider an analytic type of generalisation as a method appropriate for generating theory or reflecting on already existing theory (Ragin, 1992; Yin, 1994; Opie, 2004; George and Bennett, 2005). This case study needs to wire up to a network of case studies in CLIL in order to turn working hypotheses into theory for this field. For instance, if other case studies can be identified as proposing concurrent hypotheses then perhaps some analytic generalisation becomes possible as well having the gain of in-depth exploration form a case type of study.

IV.4.3 The requirement of good faith, ethical soundness and usefulness

In this concluding part of the methodology chapter I shall make a statement of intention regarding the form and the purpose of this study.

Alongside the other criteria discussed in the previous sections, I meant this study to be conducted in good faith, to follow canons of ethically healthy practice and to be useful.

Firstly, I placed into the service of this study my knowledge and abilities as they were at the time when this project was taking course. The study offers sufficient descriptive detail, and makes available a significantly large amount of data translated in English (see Annex) for other interested researchers to further scrutinise it in the form of secondary analysis (and possibly challenge my account). In other words, I am not holding on to my own interpretations; rather I am opening them up for a greater gain. This level of transparency shows that I do not seek to endorse any hidden agendas; my loyalties lie with the advancement of knowledge in this field.

Next, the study is approved by the University of Nottingham's School of Education Ethics Committee, and ensures explicit compliance with the University of Nottingham's code of practice. The study is also conducted in accordance with the British Educational Research Association's Revised Ethical Guidelines (BERA, 2004, 2011) and the HM Government/ Data Protection Act (1998). In addition, the Romanian Ministry of Education research ethics standards are respected and the County School Inspectorate Research Guidelines are followed. Beyond formality surrounding the ethics approval and gaining access, one should not lose sight of the fact that building up and maintaining a two way relation of trust is paramount.

In addition, I concur with Colliver (2002) who proposes usefulness as a measure of appreciating a study's value. In this regard, the study aims to raise some questions regarding the current relevance of some of the knowledge and language acquisition theories, to make an impact on CLIL pedagogy and to bear relevance for CLIL classroom practice.

This remains a case study which cannot entirely elude the 'narrative fallacy' and which, therefore, needs to be read as such (Flyvbjerg, 2011). This is one of the myriads of story lines woven around the pursuit of truth. This is science as I see it.

V: ANALYSIS FRAMEWORK

> Any analysis is '*a voice in a debate about discourses not an absolute truth'.*
>
> (Edwards, 1993:223)

This chapter develops a discourse-oriented socio-cognitive analysis framework in order to investigate the CLIL learning experience as emerged from this project.

The analysis approach developed here draws on some features from discourse analysis, conversation analysis and some of the humanistic psychology strands. The proposed analysis framework with its constituent analytic units emerged as a result of on-going negotiation between guided (by literature) and grounded (data-driven) types of analysis. Data is dealt with descriptively and analytically, thus aiming to move from description to explanation, then to recommendations of a pedagogical nature and, possibly, theorising.

This chapter starts with a reminder of the analytical focus and its symbiotic relation with data generation and reiterative analysis. This opening sub-section highlights that tentative analysis and data generation occur concurrently and cyclically until data sets are contoured. I shall then undertake a brief exploration of several analytic traditions from which I draw to tailor an analysis method and tools which would enable a thorough description and interpretation of different levels at which learning occurs. Finally, I propose three analytical units: conversational, instructional and reflective which are going to constitute the start point in the Analysis Chapter.

Before getting down to details of an analytic nature, a brief reminder of the conceptualisation of discourse is needed. In the literature chapter, discourse is presented as a concept born at the intersection of three main dimensions: language use, communication of beliefs (cognition) and interaction in social situations (Van Dijk, 1997). The study takes a socio-constructivist view of the discourse of learning whereby thinking occurs at the juncture of the appropriation of culture through interaction in a shared social space but also on a more private individual level. Consequently, this chapter discusses the necessity to articulate a socio-cognitive analytic framework.

V.1 TIGHTENING ANALYTIC FOCUS AND CONTOURING DATA SETS

Maintaining sight of the main research interest of the present study, principal and support data are distinguished.

The former consists of transcripts of the digitally recorded material: actual learning instances (parts of whole class lessons, group activities, and sections from individual follow-up interviews), and reflections on learning (sections from the individual follow up interviews, focus group interviews and CLIL teacher interview). The latter is made of non-video data (mostly paper-based text such as: diary entries, materials used in class and during interviews, materials produced by students, class teacher and parent feedback sheets, and various school documents). While the transcripts of the learning instances and of the reflections on learning together with their respective videos are the core data, the role of the support data set is to enhance the level of explanation and inference, where appropriate.

In what follows, this section briefly looks at analysis as process, i.e. it shows how the principal data is filtered through recurrent sorting until a tight enough focus is obtained and units of analysis are identified.

One of the points made in the methodology chapter concerns the special link forged between data collection and the refinement of the research focus in the exploratory type of inquiry. Generally, in a qualitative piece of research the analysis starts with the decisions that are being made at the stage of data collection about how and under what categories to store the data. While data is still being generated, provisional categories begin to emerge. Any changes regarding the re-organisation of data sets taken in light of newly emerging categories is an example of how data collection and the analysis determine each other, become part of the same process (Miles and Huberman, 1994).

The on-going reflection not only on what is being researched but also on how to fine tune the research tools to obtain rich and high quality data, determines the creation of this bonding between data generation and analysis. Part of this dynamic process are also the incipient sorting of data and the identification of the relevant data sets in tight relation with the adjustment of the investigative focus. The literature advises us to start from identifying original all embracing categories, sufficiently comprehensive to allow the sorting of all the accumulated data; after which more detailed subcategories can be identified (Wollcott, 1990).

The following diagram shows how the research focus translates into more specific aims and how these determine the data sets from which the analysis units stem. The overall research focus is on students' observed learning activity and reported learning experience in terms of *processing L2 mediated discourse*. By processing discourse it is meant here accessing L2 mediated learning spaces and inhabiting these spaces, i.e. engaging in interactive dialogic learning with others and the tasks-at-hand, respectively. Thus the learning dialogue, be it the actual learning dialogue or the learning about learning dialogue, comes to the fore in the elaboration of an analysis approach and in the identification of analysis units.

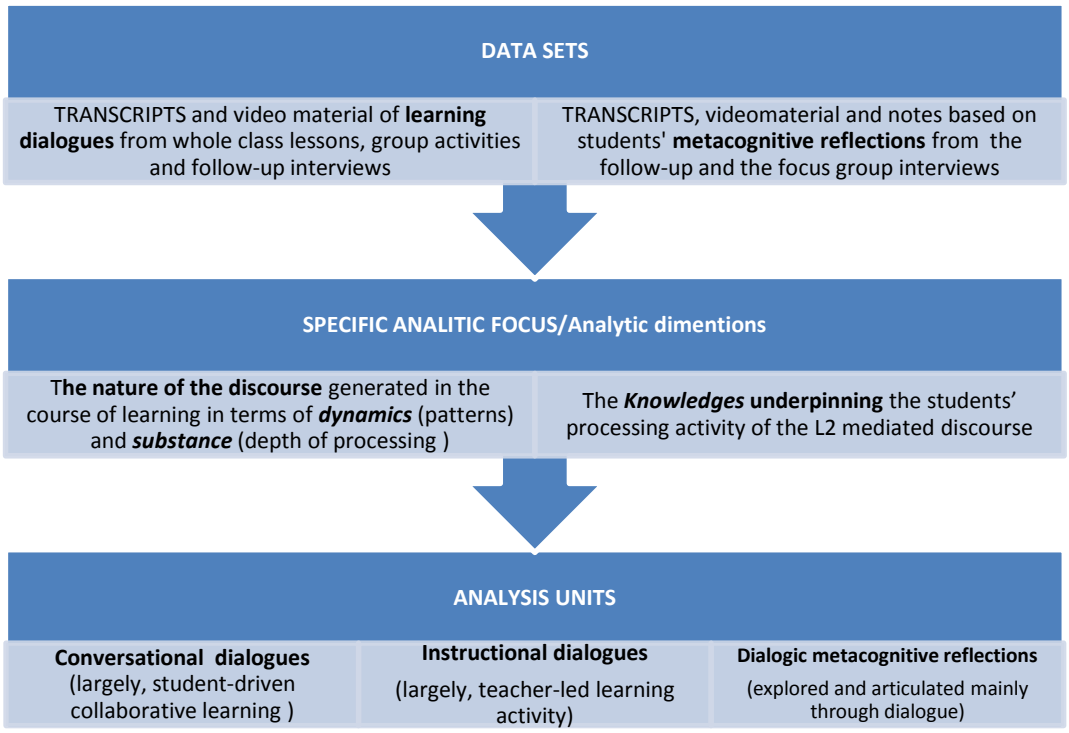

DIAGRAM 7: Analytic focus and units

It becomes obvious that especially the primary data but also to a great extent the support data are predominantly linguistic (e.g. lesson and interview transcripts on one hand, and observer's notes and diary entries on the other hand) which can all be classed as text (Freeman, 1996 *cited in* Nunan and Bailey, 2009). However, the analysis approach developed here does not commit to purely linguistic lenses; rather, a discourse perspective is adopted. Discourse here is understood as the interplay of verbal contributions, paralinguistic behaviour, context-bound elements and cultural references (Seedhouse, 2004; Markee, 2005; Nunan and Bailey, 2009).

Another argument in favour of an overarching discourse-oriented analysis approach comes from the complexity of the data generated through learning interactions. This is amplified in a CLIL setting because of the dual processing of the content and language. Therefore, analytic perspectives employed in L2 research in general may not hold the capacity to expose the very integration of propositional and linguistic knowledge which is the quintessence of CLIL type of learning. This is to say that a (still valuable) linguistic angle needs to be complemented with a manner of investigating CLIL data which casts light on the overall cognitive engagement of the students and not just the L2 work.

It follows then that CLIL studies need to tailor their analytic approaches in an eclectic fashion as opposed to completely subscribe to any of the L2 or L1 investigative traditions. Therefore, the next section highlights some of the features from several analytic traditions which inform the articulation of the analysis framework in this study.

V.2. TAILORING AN ANALYSIS FRAMEWORK

As emphasised in the previous section, a series of empirical elements influence the sorting out of the data as follows: the CLIL model developed (teaching arrangement and the students' response to this), the research design (data collection tools and the progressive focusing of the research interest), and more or less immediate contextual factors. It can be argued then that the emerging analysis approach is to a large extent a data driven one. However, it needs to be acknowledged that this analysis approach is also informed by existing studies and theories which lend it different analytical angles (interactionist, cognitive, content-based and linguistic).

The main aim here is to develop an analysis method that would do justice to the level of complexity of CLIL data rather than adopt ready-made analytic tools. The question of how to analytically navigate the CLIL learning interactions data points to three key elements in my data which are interaction, talk/text and cognition. A brief exploration of these concepts is in order here before moving on to pinpoint the main features of the analysis tailored for this study.

V.2.1 Discourse and cognition: conceptualisation and analytical implications

The humanistic strands in psychology advocate an exploration of human behaviour through 'interpretation and empathy rather than prediction and control' (Harre and Gillett, 1994:21). The idea is that observers step into a discourse space with the participants in trying to intuit the shape of their respondents' cognitive worlds. Thus, the study of human behaviour and mind becomes the study of the discourses integrated within an individual as well as the study of those discourse spaces shared amongst groups of individuals or even whole communities.

More precisely, in this study, discourse represents the sum of verbal and paralinguistic contributions which are interwoven with cultural references and context bound elements, and where the use of L2 and L1 are equally important. Discourse is held as a communicative and reflective event where analysis of text/talk of observed and reported learning equally contribute to the understanding of the complexity of a learning event. Cognition here is regarded as both individually and socially borne. Therefore, understanding learning and thinking becomes looking at both what students say in interaction with each other but also what they have to say on reflection to those learning instances they experience.

Two main analytical trends have influenced the tailoring of the analysis in this study: one holds as central the discursive nature of the mind while the other places a more traditional cognitivist slant on analysing learning. These two analytic directions are largely predicated on the classic debates around the relation between thought and language. The determinacy between thought and language has been discussed, to a certain extent, in the Literature chapter (both arguments supporting the idea that thinking ignites talk, and arguments supporting thought as linguistically constituted). Relevant to this section are however the analytical implications of these different takes on cognition.

Traditionally, cognitive psychologists tend to focus on 'solo cognitive data' (Hogan, 1999:458) to investigate thought processes through independent tasks and via think aloud protocols. The data so collected is subjected to a thematic type of analysis, i.e. with a focus on what is being reported. More

current and discourse-oriented trends look at thought processes from a socio-cognitive angle, in that interactive protocols and the dialogues resulting from these are taken as material to be analysed. Data obtained from learning interactions (with others, tasks or the self) emphasize the reactive nature of any qualitative data; thus, not only what is being reported or observed counts but also the dynamics of the data generation is accounted for.

Some post-cognitivists, maintain the concept of *discursive cognition* whereby cognition is made through talk (as defined by Loughborough School – Edwards and Potter, 1992). Similarly, generally, conversation analysts support a type of analysis which relies on the text which surfaces and only consider cognitive aspects in terms of their observability (Coulter, 2005). In brief, the founders of these analytic movements argue that, for example, emotions and attitudes are not fixed cognitive entities which reside in a black box; rather they are fluid entities which shape themselves through dialogic interactions. Following from this, psychologists with an allegiance to these strands, caution against the internal fallacy, i.e. as far as analysis goes they advise that one should limit themselves to the study of the ways in which thought processes become manifest in actual conduct. More specifically, for discursive psychologists the way in which people talk about 'thinking' can indicate a great deal about the thinking that occurs. For conversational analysts naturally occurring text forms the main source of their analytical inferences. Under both strands there appears to be heavy reliance on linguistic expression as well as only on what is made available to any observer/investigator.

Neo-cognitivists regard the argument of analysing the observable, as one which announces a neo-behaviourist trend and prefer to look at discourse in terms of cognitive processing (Van Dijk, 1997; 2006b). Although neo-cognitivists recognise the importance of language in the constituency of higher order processing, they also set forth a firm argument that the recognition of a word/concept can be in great part the result of individuals' images, stories, and emotions and not entirely a linguistic business. In order to show the different levels of the representation of a word/concept, from its surface form to its socio-cognitive conceptualisation, neo-cognitivists propose the notion of depth of processing through which different degrees of complexity in semantic or cognitive analysis is understood, i.e. a deep and surface approach to learning on the part of the individuals (Craik and

Lockhart, 1972). Similarly, Graesser *et al*. (1997b) distinguish between deep comprehension (applying knowledge, reasoning hypothesizing and metacognitive reflections) and superficial comprehension of content made too explicit or easy, which generates shallow knowledge. This leads to the identification of five levels of discourse representation constructed during discourse comprehension. Kintsch (1988) identifies the first three levels to which Graesser *et al*. (1997b) add two further layers as follows: the surface code (the exact wording and syntax), text-base (explicit proposition – main concepts stripped down from words with a purely grammatical role), referential situation model (mental model – referential micro-world of what the text is about), pragmatic communication/the communication context (the environment of the actual communicative event in which the participants are engaged), and discourse genre (category of discourse such as narration, exposition and persuasion) (also see Graesser *et al.*, 2002).

This study, subscribes to the argument that elements from CA, ethomethodology, discursive psychology and cognitive psychology need to be used in conjunction with one another for a fuller understanding of the analysed material. The analytical line in this study resonates to some extent to that in Pomerantz's study (2005) where CA elements are corroborated with ethomethodology in an attempt to bring into the observation- and text-dominated CA analysis an introspective element, i.e. to allow students to orient to or categorise their own discourse. Finally, in a study which assumes a socio-cognitive conceptualisation of cognition, it would make sense to uncover thought processes that occur during learning by employing not only a thematic type of analysis (whereby categories are teased out) but also by adopting an interactional analysis slant to highlight the co-construction of meaning, in addition to considering elements of performative analysis (which looks at the use of words and gestures across a narrative).

V.2.2 A socio-cognitive multilayered microanalysis

> *Classrooms are [...] ever-changing, complex contexts [...] where participants play a crucial role in constructing the interaction. [Therefore] classroom discourse should be investigated from a multilayered perspective.*
>
> (Walsh, 2006:43-56)

In broad lines, the discourse-oriented analysis framework articulated here reflects a layered analysis of classroom discourse as endorsed by scholars such as Walsh (2006), Seedhouse, (1994), Van Lier (1996) and Lantolf (2000). This part looks more specifically at the exact features of the analysis framework developed in this study and how these features complement each other to effectively exploit my data.

Analysis is undertaken here as an interpretive process. There has been thorough preparation of the transcripts aimed to maintain my recurrent observations as close as possible to the original learning moment. To this end I have followed in my analysis work the original transcripts and the accompanying video recordings in order to look at first hand data throughout the analysis work (e.g. intended meanings in L1). Although carefully considered and accurate translations are provided, I remain aware of any involuntary elaboration of these transcripts. Any transcripts (texts) are already filtered or mediated; they are in themselves a form of social reconstruction (Jaworski and Coupland, 1999).

The discourse of learning and also its analysis are multilayered phenomena. Van Dijk's proposal of context models suggests that the individual's characteristics and perceptions nearly override the features of the environment of the communicative event (place, time, conditions, other participants, actions and goals) and these environments/contexts become what individuals perceive them to be (2008). For example, if one takes a learning dialogue between three children on the spiritual life of American Indians, then the transcript of this learning instance will be made of the children's individual context model of life in the American Indian community (own individual mental models), then the children's negotiated and shared understandings of the content (this is a space where through social interaction children assimilate or accommodate new elements in light of which they modify their mental models), and the children' context model of the

communicative situation in which they are (learning together as a group in a CLIL lesson). Further, when this text is subjected to my analysis as a researcher, then my understanding of what I am witnessing is added. It may, therefore, be safe to argue that analysis of any text becomes layer upon layer of interpretation from data to broad categories and finally to more established categories.

The study places great emphasis on bringing into analytic focus naturally occurring discourse. From the way in which the lessons have been set up (explorative and collaborative work with content driven tasks) there can be seen a clear interest in genuine learning interactions as opposed to induced activities (stimulus–response type of tasks). Furthermore, CLIL interactions, provided that they are the result of good teaching practice, are a good source of language in use as opposed to linguistic drilling. Then, the detail in which the transcripts are captured and the fact that all transcripts have their corresponding videos enables an analysis of real data that has not been edited in any way or cosmeticized but transcribed in great detail in order to bring into the analysis as much as possible from the captured learning interaction. Finally, the texts used in the follow up interviews are an extension of those used in class as opposed to 'textoids' (Graesser, *et al*., 1998) that are specifically designed to manipulate variables in the relation of input-output under laboratory experimental conditions. This also contributes to the generation of a learning discourse with a natural feel to it.

The interplay of L1 and L2 is important to capture in the analysis as the sequencing of L1 and L2 occurs at the level of whole stretches of dialogue, lines and even at word level. Knowledge of L1 and current trends in relation to how young children use it are essential in the interpretive process here. For instance, brief comments pupils make in L1 in the midst of an L2 stretch of dialogue can indirectly indicate level of understanding, emotional state or social positioning. Similarly, a good understanding of L1 types of interference can help to clarify intended meaning in L2 especially when children are working on content.

An inclusion of nonverbal aspects becomes essential because CLIL learning is quintessentially a multimodal activity. In general, in discourse studies language remains central, as it does in this study; nevertheless, users employ more than one semiotic system and therefore communication and learning

interactions extend beyond sign (Jaworski and Coupland, 1999; Markee, 2005). Especially in spoken discourse, it becomes obvious that it is not only the language per se that counts. Besides stress and intonation which can render meaning, spoken utterances are often accompanied by non-verbal activity in the form of gestures, facial expressions, body position or proximity all of which bring a great deal of detail into the communicative event. In the current study, similar to a CA approach, most transcribed utterances come with a description of the interactive activity students are engaged in at any particular point in a dialogue. With details of such finesse a fine grained analysis becomes possible in a similar fashion to analysis techniques pursued in conversation analysis.

A fine grained microanalysis in its turn enables the inclusion of a cognitive angle in the analysis. All transcripts are originally recorded just as the dialogue unfolds both in L1 and L2 and they contain very detailed notes of accompanying paralinguistic actions and also in places the times elapsing between turns, hesitations and pauses. As mentioned also in the literature chapter, some scholars argue that speech accompanying gestures can be a window into human cognition; in other words, they can reveal the moment in the ongoing thinking process when the concept of the linguistic items is formulated (McNeill, 2005). On an analytic front, Seedhouse (2004) advocates for an inclusion of CA features (the inclusion of paralinguistic contributions and non-verbal behaviours) in analysing classroom talk alongside the more traditional DA approach which tends to look at text more from a linguistic angle. In doing so he convincingly exemplifies how in a purely DA approach only the communicative functions are highlighted and the essential information about the substance of the dialogue is lost. Other writers emphasize the importance of drawing detailed transcripts (documenting discoursal elements such as fillers hesitations, silences, volume, turn overlaps, gestures, eye gaze and facial expressions) in order to add value in the examination of any transcript (Lazaraton, 2004; Markee, 2005).

A CLIL tailored multilayered microanalysis can unpick the features of these dialogic learning interactions, illustrate how different learning dialogues complement each other and enable an evaluation of these dialogues' potential to support deep learning. In summary, I am arguing for a multilayered analysis approach of the CLIL learning event and a corroboration of a socio-cognitive angle in order to trail intellectual activity.

V.3 A TRI-DIMENSIONAL ANALYTICAL TOOL FOR THE DISCOURSE OF CLIL LEARNING

Three dimensions are inbuilt in the analytical tool designed here to look at learning dialogues. One is the dynamic of the dialogue (which looks for interactive patterns); the next is the texture or substance of the dialogue (which looks at both linguistic and propositional work in terms of depth of processing, i.e. evidence of higher order thinking); and finally this looks at the strategies and knowledge underpinning students' processing of L2 mediated discourse. In other words, these dimensions are corroborated to surface interactive patterns of CLIL learning, to scrutinise the dialogues for any proof of deep learning and to explore the students' use of available knowledge to sustain L2 mediated learning. In summary, all three dimensions maintain as central an interest in students' thinking while learning in an interactive and L2 dialogically mediated environment.

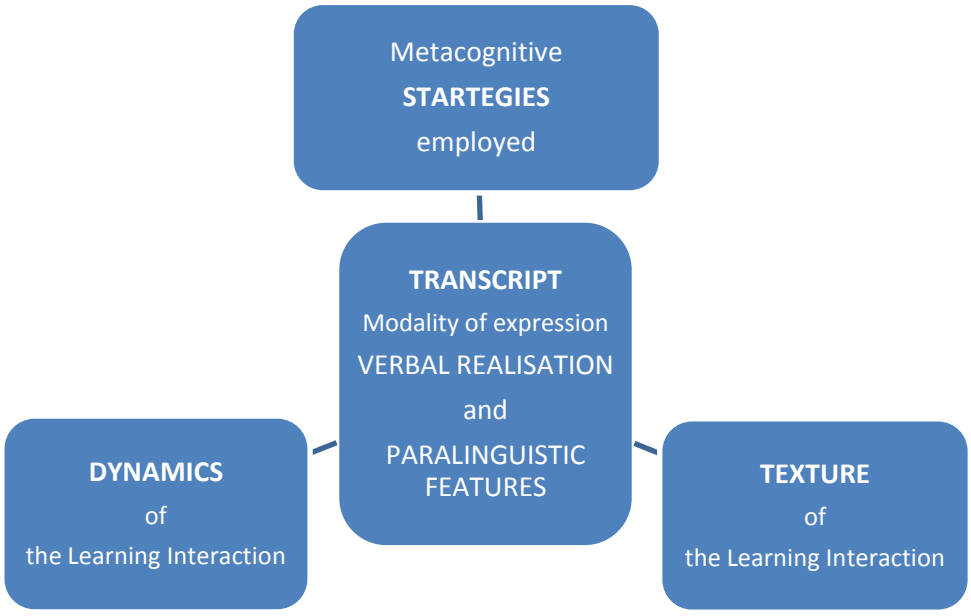

DIAGRAM 8: A tri-dimensional analysis tool tailored for CLIL dialogic-interactive learning

V.3.1 The DYNAMICS of the learning discourse

DYNAMICS of the Learning Interaction			TRANSCRIPT of classroom discourse (Modality of expression)	
Argumentative Strand Patterns generated by discussion and argumentation	*Linguistic Strand* Patterns driven by negotiation of meaning	*Management of the learning Strand* Management of the process as a group and roles assumed	VERBAL REALISATION The Language of Expression L2 and L1	PARALINGUISTIC FEATURES stress, intonation, fillers hesitations, silences and turn overlaps NON-VERBAL BEHAVIOUR gestures, facial expressions, eye gaze and proximity

DIAGRAM 8a: Analysis tool for looking at the dynamics of a CLIL learning unit

The discourse dynamics dimension maintains in the foreground a search for interactive patterns. Firstly, the analysis under this heading aims to primarily follow students' train of thought. In other words, the analysis envisaged here considers larger units of text whereby sequentiality of utterances is carefully mapped. This leads to an identification of learning units which are not necessarily a straight forward partitioning of the transcripts. Rather, incoming sentences are interpreted in the light of preceding ones because language users operate both mentally and interactionally in an on-line and on-going fashion that is tentative. Therefore, a learning unit is not necessarily a sequential arrangement of moves. In many instances there are moves belonging to a certain learning unit which occur much further in the text. Heritage, for example, acknowledges the fact that 'each contribution [in a dialogue] is dependent on the previous ones [and at the same time] it creates a new context for later actions' (1997:163).

In addition, the analysis also notes the significance of moves and transactions in terms of what they reveal about the social side of the students' interaction (essentially the roles they assume in managing their learning process). Although the main focus remains the students' train of thought even at this stage of identifying interactive patterns, it is important to recognise its interdependence with the social side of the interaction. For instance, Erickson (2006) points out that even when the focus of a study is the propositional

content of a classroom based learning dialogue the interactive side needs to be accounted for as well.

The literature is replete with models of classroom discourse and analytic frameworks to investigate classroom talk. From the more traditional DA to interaction analysis and conversation analysis various proposals emerge. The classic quest for patterns on language use under a DA approach (Taylor, 2001) was soon complemented by an analysis of the interactive dynamics of the classroom activity. Sinclair and Coulthard's (1975) IRF pattern (initiation, response, feedback) has been followed and revised in numerous other studies. Walsh (2006) provides a historic and comprehensive review of various approaches to analysing classroom discourse (pp.40-60), and notes that the communication patters are different between language classrooms and content-based ones. The latter, tend to reflect the cognitive engagement as well as the interactive dialogic exchanges. For instance, in a similar fashion with Lee (2007) who looks at locus of contingency in the IRF pattern in L2 mediated learning, in the field of CLIL, Nikula (2007) looks at the value of the third move. According to her study, the third move from the more traditional IRF pattern gains an enhanced strategic role in instructional exchanges under the CLIL approach. There appears to be a tendency to treat this third move as an opportunity to develop understanding, with joint ownership from teacher and students.

V.3.2 The TEXTURE of learning discourse

TEXTURE of the Learning Interaction			TRANSCRIPT of classroom discourse (Modality of expression)	
Content	*Language*	*Management of the learning*	VERBAL REALISATION	PARALINGUISTIC FEATURES stress, intonation, fillers hesitations, silences and turn overlaps
The nature of the thinking exercise generated by working on understanding	Decoding and negotiation of meaning	Work method and learning tools	The Language of Expression L2 and L1	NON-VERBAL BEHAVIOUR gestures, facial expressions, eye gaze and proximity

DIAGRAM 8b: Analysis tool for looking at the substance of a CLIL learning unit

DA and IA type of analyses can reveal recurrent patterns and thus indicate the shape of the frame of the dialogue; however, they have been criticised for a tendency to project a structure onto the dialogue, for not allowing the text to speak for itself and for missing out an analysis of the quality of learning interactions. Particularly with topical L2 mediated learning discourse, it is essential to pay a great deal of attention to the texture or substance of talk as well (Greenleaf and Freedman, 1993). While an investigation of the interactive dynamics of learning may provide the bare bones of the learning phenomenon, an analysis of the cognitive work can provide a strong indication of the educational value of classroom based learning dialogues.

Under the heading discourse texture/substance the analysis aims to unearth evidence of the kind of thinking which occurs during these dialogic learning interactions. If under the argumentative dynamics of the dialogue the idea is to navigate the students' discourse by following their train of thought in order to uncover patterns of how they think together, this part of the analysis aims to look at the depth of discourse processing, i.e. proof of deep or superficial learning. More precisely, the analysis takes an interest in the higher thinking activity displayed and reported, the interplay of top-down and bottom-up types of processing.

In the literature some of the studies with an interest in the substance of talk from a socio-cultural perspective and with an added cognitive dimension are as follows. DeVito and Grotzer (2005) discuss the need to create a method to track cognitive processes exhibited in discourse and note that very few techniques have been developed to attribute cognitive processes to statements made during discourse. Drawing on Anderson & Krathwohl's taxonomy of thought processes (2001) which revises Bloom's original proposal, they design an analysis tool to track thinking activity displayed in classroom generated discourse (Perceive, Remember, Understand, Apply, Analyse, Evaluate and Create). Another example comes from Hogan (1999) who looks at sense making discussions and proposes discussion diagrams (conceptual content and the reasoning process) as an analysis tool.

In addition, my work has been influenced to some extent by Neil Mercer's work. He proposes a socio-cultural discourse analysis framework (Mercer, 2004) and identifies a model of classroom discourse constituted of disputational, cumulative and exploratory talk, which he founds on the notion

of inter-mental developmental zone/ inter-thinking (Mercer, 2000). Finally, Walsh's 4 modes of classroom discourse have inspired to a lesser extent my designing an analytic tool: managerial mode, classroom context mode, skills and systems mode, and materials mode in L2 mediated classroom discourse (2006).

V.3.3 The Strategies and KNOWLEDGES UNDERPINNING students' learning discourse

Thematic Analysis		TRANSCRIPT of follow-up interview (Modality of expression)
Types of KNOWLEDGE activated	*Underlying METACOGNITIVE STRATEGIES employed* Reported and Observed	VERBAL REALISATION (L1 and L2) PARALINGUISTIC FEATURES NON-VERBAL BEHAVIOUR

DIAGRAM 8c: Thematic analytic tool for the learning interaction with the task

This part of the analysis looks at the knowledge underpinning students' learning actions. Thus besides looking at interactive patterns and the intellectual value of the CLIL learning dialogues it is also interesting to see the types of knowledge and the strategies which support the CLIL learning experience. This involves analysis of students' accounts from the follow-up interviews in which they dialogically in conjunction with the researcher reflect on their own learning. These metacognitive dialogues thus generated are looked at under two different analytic takes on text.

One is a straight forward thematic analysis of text (what strategies students report and therefore what knowledges come into play to support these; similarly, what strategies are observed by the researcher and use of knowledge by the students can be inferred). This comes under the influence of ethomethodology whereby respondents are encouraged to make sense of their own learning experience through dialogue and their accounts are taken at face value (what students mean is the accepted reality of their learning) (Edwards, 1993). In a complementary fashion, a thematic analysis of the researchers' observations is also undertaken here. Pomerantz (2005), for instance, warns that students' accounts must be treated as amorphous and shifting rather than stable and explanatory and that there is a danger in any

analysis to be drawn and driven by the account and minimise the role of the observed version of the investigated learning instance. Therefore, my analysis aims to bring in a reasonable balance, so that in the resulting categories (what types of knowledge are activated) both perspectives prevail.

The other kind of analysis, but which is applied only to the students' metacognitive discourse draws to some extent on discursive psychology. When possible I also look at children's accounts to see how they use language to talk about cognition. In other words, what they actually do when, for instance, they claim that they concentrate, think, remember, or reason, i.e. what learning activity is actually described when they claim they describe cognitive activity. For this purpose, each student's accounts (approximately 3 to 4 per child) are compared and contrasted in the way some of these words are used.

In summary, the analysis here aims to build on three dimensions: the students' version is about what they think they do when they learn, my observed version is about what I think I am witnessing, and the way in which students use language describing cognitive actions reveals how they orientate themselves in relation to the cognitive realm.

V.4 ANALYTICAL UNITS OF CLIL LEARNING DISCOURSE

V.4.1 An INTERACTIVE-DIALOGIC LEARNING UNIT as a generic analytic unit for CLIL learning discourse

As previously explained, the analysis in this study aims to chart the learning event as a whole entity through a multilayered microanalysis. Particularly because there are so many details to consider while analysing dialogue and interaction here, the identification of compact units of analysis appears suitable. Further to this, the theoretical framework of this study subscribes to the view that learning is generated as a result of an on-going exchange between the social and the more individual cognitive spaces wherein language, if not the only modality of expression, plays a crucial part. Thus, a generic *interactive-dialogic learning unit* is being delineated as usually displaying the following main characteristics.

- A set or agreed *learning objective;*
- *Interaction* with other participants and the self as well as interaction with the immediate learning environment or even the broader context
- *Dialogue* using the target language, and/or mother tongue and/or, in some instances, translanguaging (conflation of elements from both languages);
- *Multimodal engagement* reflected through a string of linguistic and paralinguistic contributions;
- *An attempt to learn* (decipher linguistic input and/or acquire propositional content) which can display varying degrees of success;
- A mix of *higher* and *lower* order *cognitive processing* consciously set into play; and finally,
- An accumulation of two or more *transactions* which comprise a series of *moves* (Drawing on DA terminology, the structure of *an interactive dialogic learning unit* here is determined by a coherent string of transactions that cumulate towards the solving of a task or part of it. A *transaction* constitutes an articulated attempt to tackle one aspect related either to content, language or work strategy. A *move* represents usually an individual student's contribution, or initiation or attempt to contribute.)

This generic analytic unit subsumes three specific types of analytic units: conversational learning units (student driven collaborative learning dialogues), instructional learning units (teacher-led learning activity) and metacognitive learning units (reflections on learning explored and articulated mainly through dialogue). Particularly because the relevant literature tends to be replete with overlapping terminology, it becomes essential that I illustrate and lay out the distinct features of each of these three types of specific learning units.

The more generic features of the interactive-dialogic learning unit described above largely define all three types; nonetheless, some distinct characteristics which set them apart shall be exemplified next.

V.4.2. Conversational learning units

Conversational learning units (CLUs) represent student-sustained learning dialogues, i.e. both the texture and the dynamics of the dialogue are primarily determined by students. CLUs are usually identified in the unaided/student-driven collaborative group work activities but they can also occur in other dialogic interactive learning set ups. For example, in some instances the teacher-led activities seem to break into conversational spells particularly when the teacher allows students some space.

Other studies from the literature on analysing classroom talk which propose similar analytic units are as follows: *learning conversations* (Roehler *et al*., 1996) and *dialogic spells* (Nystrand *et al.*, 2003). In an institutional setting such as classrooms the discourse does not fully resemble naturally occurring conversations; however depending on the teaching-learning arrangement some institutional learning conversations may be fairly close in parts to ordinary conversations. Walsh (2006) brings in the concept of 'fingerprint' from (Heritage and Greatbatch, 1991) and explains that as with each real life conversation the classroom based learning conversations will have a distinctive fingerprint and will therefore be unique. This take indirectly poses the question of whether one could possibly identify sufficient common features between these conversations to be able to propose typical classroom based learning conversations.

Based on the empirical data from my study, a conversational learning unit presents itself as follows:

Conversational Unit Y3 Ancient China **Student-driven group work activity**
Group 1 (Rux, AG, Adw and Mrc)

Activity: The lesson introduces the students to elements of Chinese culture and lifestyle with the aim of building up the necessary background information and related language to work on a quiz on China. This comprises 10 questions each of which is accompanied by corresponding pictures and background information. The students are presented with only a few straight-forward comprehension questions; the remainder of the questions are meant to stimulate them to work out answers rather than look for ready-made answers hidden in the text.

This learning unit depicts the learning interaction between four students as they attempt to find an answer for Q2.

T=CLIL class teacher **Res=**researcher **St**=unidentified student
Ss = usually, over 2 students in group work & over 4 students in whole class activity

TURNS	The Language of Expression **English** **Romanian**	*[nonverbal contributions accompanying the interaction]* [added explanatory insertions] **^^^**(pauses) **aaa** (interjection indicating hesitation) **ahaa** (interjection indicating an eureka moment) overlapping turns **xxx**/**xxx** (unintelligible speech) **the text in bold represents emphasis** Language transfer (Romanian & English conflated words – letters &/or sounds)
		Q2: Most of the Chinese houses had the doorways facing South. Can you think why? Possible answer: To allow the warmth to enter the house
34	**Adw**	Let's move on to the second question *[casts a glance over the materials]* Number two, number two
35	**Rux**	*[reads out from text]* Most people in ancient China could not afford to live in fancy houses ^^^
36	**Adw**	*[interrupts Rux]* Most of the Chinese houses^^^
37	**AG**	She didn't even get a chance to finish the text
38	**Mrc**	*[in reply to Adw's reading of the Q]* Most? What does most mean?
39	**Rux**	We can't talk and answer the question without reading this [text] first *[uses a friendly-persuasive tone of voice]*
40	**Adw**	*[Ignores Rux, teams up with M ,reread the q together and are stuck on the word 'most']* Most of the Chinese houses had the doors facing South. Can you think why? What does it mean 'most'? *[they go off and ask the Res]*
41	**Rux**	*[Rux ignores the boys in her turn and carries on reading the text to herself in a quieter voice]* Most people in ancient China could not afford to live in fancy houses. They lived in small houses made of mud brick, with only one room and a dirt floor, just the way most people in Europe or West Asia or Africa lived, and the way most people in the world still live today.
42	**Res**	*[accompanied by gestures of counting fingers to suggest lots]* What does ^ which word? ^^^ Many many of the Chinese many yes? Many many many ^ yes?

43	**Adw**	So many houses of these Chinese people have doors facing South. Can you think why?
44	**Rux**	ok we **are** on the second one now alright *[joins Adw&Mrc]*
45	**Adw**	Ahaaa ^^^ so we need to be talking about these houses
46	**Mrc**	Not just that we need to say why they haven't got any houses why the houses haven't got any doors
47	**Adw**	Actually we need to be saying why the houses haven't got any doors and windows The ^^ the Chinese house
48	**Mrc**	The Chinese is little
49	**AG**	*[facial expression indicting disagreement]* It is big ^^ it is ^^^ it is twice it is four times the size of Romania
50	**Rux**	Boys, boys where does it say 'windows' in the text
51	**Mrc**	Yes ok China the country is bigger but how about the people ^ how do you know
52	**AG**	People are four times ^ oh hang on ^ Oh God ^ twenty two times more than the Romanians
53	**Rux**	*[reading through Q3 while the boys are having this debate on the population of China]*
54	**Mrc**	*[to AG]* Are you saying they are twice as tall as we are?
55	**AG**	Oh no no I mean twenty two times larger than us as number of people
56	**Mrc**	Ok yes yes but they are tiny people
57	**AG**	*[facial expression indicting disagreement]*
58	**Rux**	Shall we leave this question for last?
59	**Mrc**	Because it's little
60	**Rux**	Because it's little *[intonation indicates tentativeness]*
61	**Adw**	*[in a firm voice indicating confidence]* Because is little ^^^ the house of China is a little
62	**Mrc**	Yes
63	**Rux**	You didn't even read the whole text for this question! *[in reply to the boys' elaboration of the answer]*
64	**Mrc**	This is the trad ^^^ this is *[struggles for the word 'tradition' and goes off to ask the Res]* What's the English for 'tradition'?
65	**Res**	Tradition

66	**Mrc**	This is tradition ^ is little house ^ this is tradition
67	**AG**	They have big doorways have a look for yourself and measure it *[points on the poster to the picture of a poor family's house]*
68	**Mrc**	*[does the measurements]* Oh yes the door of that [poor family's house] is twice the size of that [wealthy family's house]
69	**Adw**	No not really because it's different perspectives in these 2 pictures one [poor family's house] is a close up and the other one [wealthy family's house] is seen from a distance
70	**AG**	Ok it means the answer is good then. Let's move on to 3, shall we?
71	**Rux**	Look it's showing us more about China *[appears to be looking at the picture related to Q 5]*
72	**Mrc**	So this is a tradition ^ a small house

TABLE 3: Conversational Learning Unit (CLU) [Annex 1O: lines 34-72]

The features listed for the generic interactional learning unit become more specialised as they indicate in what way this learning unit comes close to naturally occurring conversations.

- *Ownership of the learning objective*

In the example provided here, the unit is shaped to a large extent by the set task (students are asked to work their way through several questions in a quiz on China for which they have available relevant materials). The four students appear to keep sight of the set aim and work towards producing an answer for the question with which they are presented. What takes this unit close to a conversational unit is the fact that in the above scenario, besides the overall aim of producing an answer as a goal imposed by the teacher, students also have the space to interpret and digress, and when doing so a *set or agreed learning objective may alter or even be enhanced.* For example, lines 48-56 and 66 to 70 are the conversational core of this learning unit. There was no aim set that they should discuss population size or perspectives in graphic representations, but they do tackle these aspects and tacitly agree on an ad-hoc objective to clarify them and reach a shared understanding.

- *Relatively unconfined learning space for the interaction with other actors and materials at hand*

Students make personal decisions or negotiate methods of working out things in a conversational type of interaction. Usually students grab turns as they feel they have something to add, clarify or argue about. This often results in overlapping turns, interruptions, or episodic disengagement. For instance, in the illustration provided above, three members engage in a debate from line 49-57 whilst the fourth member (lines 51-57 Rux) apparently disengages with the boys' discussion. Then, as in any conversational event individuals may happen to notice or be prompted by different aspects just at the same time, which often results in overlapping turns or differences in reaction time. For instance in line 49 AG is prompted by Mrc's statement from line 48 whereas in line 50 Rux is still searching the text for the clue word 'windows' which is triggered by Adw's statement in line 47.

There is however a certain degree of constraint coming from the set task with which the students are asked to work, and in some units this is more obvious than in others (e.g. in some conversational units one can notice a heightened awareness of allocating turns and keeping the group dynamic tidy).

- *Self-governed code-switching*

There was an overall encouragement to use the target language but this was not closely monitored or enforced in the students' independent work. Thus, students had the freedom to use both languages as they pleased. This resulted in conversational interactions expressed predominantly through mother tongue, primarily because of the students' varying degrees of confidence in the use of L2. Code switching occurs naturally on the student's call, i.e. triggered by a need as sensed by the student. An illustration of this can be found in line 49 where AG starts his move in English but because the content he wants to deliver is fairly complex and he is concentrated on the idea he intends to put forth, he spontaneously switches to L1. Another such example of spontaneous conversion from one language to the other can be seen in line 42 where I am taken slightly by surprise when the students ask the meaning of 'most' and I clearly struggled to an extent to provide a better synonymous phrase so I resorted to suggesting 'many' and mimed 'counting lots of fingers'. I became aware as I was going that it may have not been

sufficient and I naturally fell back on my L1 when I ended my explanation with an elliptic comprehension check question 'yes?'. This instant switch, almost sub-conscious at the time, opened up a possibility for clarification through mother tongue.

Code-switching can be a choice the individual makes instinctively to fulfil the purpose of communicating an idea. Nonetheless, at times, even in these conversational interactions, the fact that they occur in a formal learning setting surfaces. An exemplification can be identified in line 47 where one may notice that a different rationale lies behind Adw's choice to switch to English. His code switching here may have to do, to a large extent, with the overall requirement of the task which asks students to explore possible answers and be ready for a follow-up discussion of their variants.

- *Multimodal engagement*

In great part due to the nature of the CLIL approach, students tend to engage in learning through a variety of modes of accessing and delivering information. The conversational type of interaction witnessed in this study reveals moves made of a string of linguistic and paralinguistic contributions. Students appear to enter and exit different learning modes with relative ease especially in the more content-driven free discussions. The modality of expression within one move may range from one mode of communicating to a corroboration of various modes of communicating, all with the overall aim of articulating a contribution. For instance, the former can be illustrated by line 57 where AG uses facial expression to express disagreement. The latter, I shall exemplify with the following move from a different conversational unit.

Ahaa the mens are looking through the *[mimes adjusting a telescope to see from a distance]* ^^ bear with me for a bit I can't remember again how to say that in English

As the coding suggests, the student who is trying to articulate a contribution here makes use of Romanian, English, miming, gesturing, and pausing in order to put his message across.

Moving back to the conversational unit provided above, another observation needs to be made. The use of deictic references is a fairly frequent feature of naturally occurring conversations, especially between dialogic partners who assume a certain level of shared understanding. A few such examples can be

found in lines 68 and 69 where Mrc and Adw generate an exchange heavily reliant on deictic references (Mrc uses 'that' twice and Adw uses 'one' twice). The exchange makes sense to the boys as they are both looking at the same picture and using gesturing to compensate for the lack of linguistic explicitness. The use of other modes of expression (such as pointing in a picture) appears to substitute the need for explicit denominations as the students often opt for economic, pragmatic and, at times, inventive ways of communicating. It is this type of multimodal engagement which is responsible for the generation of dialogues which, if solely looked at from a linguistic perspective, (i.e. not in conjunction with all other modes of expression), may appear somewhat ambiguous and limits a more inferential type of analysis.

- *A novice attempt at grasping the content*

If one is to summarise the students' elaborated answer, this can probably read 'In the past, it was customary for Chinese people to have small houses because of their short stature'. From the perspective of a History teacher this may appear to be a moderately successful attempt at an answer since the expected answer should have comprised a rationale for having houses with doorways facing south. This is what the students appear to have managed to put together through conversing, unaided except for the inbuilt support in the materials with which they were provided.

- *Thinking through conversing*

Regarding the thinking involved in this conversational interaction, a slightly different picture emerges. There appears to be plenty of scope for higher order thinking in these conversational spells. For example, it is interesting how Adw draws upon the notion of spatial awareness when he makes his colleagues aware of the differences in size because of the different perspective from which the houses are drawn. In addition, the students' free talk seems to accommodate opportunities for challenging peers which, if pursued, may be conducive to fostering criticality. For instance, in line 51 Mrc challenges AG on the accuracy of the information about the stature of the average Chinese person 'Yes ok China the country is bigger but how about the people ^ how do you know'. Mrc holds his train of thought and further down the line in the dialogue (line 54) he requests further clarification under the same argument around a Chinese person's stature vs. population size 'Are you saying they are twice as tall as we are?'

V.4.3 Instructional learning units

Instructional learning units (ILUs) constitute mostly teacher-driven learning dialogues, i.e. the dynamics and the texture of the dialogic interactive learning exchanges are heavily influenced by the teacher's contributions and by the arrangement of the activities (lesson lead-ins and follow-ups). ILUs are usually identified in whole class teacher-led activities but they may also occur in some of the independent student-driven group activities when the teacher intervenes and provides significant support. This type of interactive –dialogic learning unit is inspired from similar analytic units proposed in the literature such as: *instructional episodes* (Donato and Adair-Hauk, 1992 *cited in* Nunan and Bailey, 2009); *instructional conversations* (Pressley *et al*., 1996; Hogan and Pressley, 1997); and *instructional dialogue* (Nikula, 2007).

The following sample can be taken as a typical instructional learning unit as emerged from the empirical data gathered in this study.

Instructional Unit Y3 American Indian Pictograph Stories

Teacher-led introductory activity

This learning unit shows the Res recycling some of the aspects students learnt in a previous lesson about features of homes of different communities. The aim of this unit is to lead the students to use acquired knowledge about the American Indian communities in order to make inferences about the people's lifestyle.

T=CLIL class teacher **Res=**researcher **St**=unidentified student

Ss = usually, over 2 students in group work & over 4 students in whole class activity

TURNS	The Language of Expression **English** **Romanian**	*[nonverbal contributions accompanying the interaction]* [added explanatory insertions] ^^^(pauses) **aaa** (interjection indicating hesitation) **ahaa** (interjection indicating an eureka moment) overlapping turns **xxx**/**xxx** (unintelligible speech) **the text in bold represents emphasis** Language transfer (Romanian & English conflated words – letters &/or sounds)
1	**Res:** Children children do you remember do you remember what you talked about in the last class with Chris do you remember?	
2	**Ss:** yes	
3	**Res:** what was it that you talked about	
4	**Cdr***[off task]:* he should move to a different table	
5	**Res:** Shush *[in a gentle tone of voice]* I am only interested in the lesson right now we'll deal	

	with other things later ^^^ what did you talk about what did you learn in the previous lesson
6	**Cdr:** about the ^ the ^ the ^
7	**Mrc:** the Celtic house
8	**Cdr:** about the human body [reference to lessons we did as part of the pilot work several months prior to this]
9	**Res:** not a very long time ago just in the previous lessons
10	**Ioa:** Celtic huts
11	**Mrc:** Celtic huts
12	**Res:** ok Celtic huts and ^^ and ^^
13	**Mrc:** tepee
14	**Res:** and the American Indian tepee
15	**Cdr:** and the igloos
16	**Res:** and the igloos that's right so we looked at three different types of houses ok children today we are going to be looking only at the American Indians the American natives yes?
17	**Ss:** yes
18	**Res:** what did you find out when you learnt about the tepees what were the most things that you looked at?
19	**Ss:** ^^^
20	Res: why were the tepees so easy to fold? Fold and pack why? Why were they so easy to fold do you understand to fold?
21	**Cdr:** yeah to fold
22	**Res** *[demonstrating]:* I am folding this piece of paper see? I am folding it and now I can put it in my pocket can take it away
23	**Adw**: yeah yeah to fold
24	**Res:** why why was it easy why were the tepees easy
25	**Cdr:** to be able to
26	**Res:** why were they easy to fold and pack
27	**Cdr:** to be able to take them [tepees] with them and move from place to place to conquer other places
28	**Res:** that was a very good answer can you try that in English?
29	**Mrc:** because what's the English for 'set fire'
30	**Res:** set fire
31	**Mrc:** because set fire anti only
32	**Ada:** because ^^ *[gesturing]* they move around all the time
33	**Mrc:** xxxxx

34	**Cod** *[side talk to Cdr looking in a science book with shuttles]*: Check out the space ships the Americans have now
35	**Cdr** *[side talk to Cod]:* Cool I like this one here
36	**Res:** boys did you wanna shut that book please shut that book and pay attention did you hear what they said they said that the Sioux this American Indian tribe used to move around a lot why did they move around a lot?
37	**Cdr:** for the camp for the water
38	**Res:** for the water very good
39	**Mrc:** for the food
40	**Rux:** for the animals
41	**Res:** yes yes the animals are the food
42	**Adw:** because they hunting ^^
43	**Cdr:** buffalo
44	**Ss:** bufallo
45	**Ada:** because the conditions
46	**Res:** conditions what conditions
47	**Mrc:** for the bison buffalos
48	**Res:** buffalos because the buffalo herd was moving round and the American natives had to follow the buffalo herd ^^

TABLE 4: Instructional Learning Unit (ILU) [Annex 2.1G: lines 1-48]

As in the previous subsection, I am going to lay out the specific features for an instructional type of interaction.

- *Compliance with the learning objective*

In the above sample, the unit is generated by the question articulated in move 26 which invites students to reflect on the usefulness of having easy to set-up homes for the Sioux tribes. In units of this type, usually the aim is very much controlled by the teacher. As can be seen in the above example, there is a tentative attempt to break into a more conversational type of exploration on the part of two students (lines 34 and 35) but this is dismissed as irrelevant. The content of what the boys were talking about became clear to me only after transcribing the data, so at the time, I dismissed their attempt to digress on grounds of not paying attention to the course of the

lesson. However, full access to the boys' exchange makes it obvious that they were not far off-task; they were actually contemplating the idea of change over time (what America looked like when the American Indian tribes were thriving and the technological advancement one can see nowadays). These types of units display an overall tendency to follow the aims formally set by the teacher sometimes at the expense of attempts from the students to change the course of a learning event.

- *Fairly controlled learning space for the overall learning interaction*

Within the instructional units, turns are often allocated and even when this is not the case, there is a lesser tendency for overlapping turns. In the conversational units there can often be at least two learning actions taking place at one time (e.g. in a group of four students, three members may be having a consultation while the fourth one may be engaged in some individual work; or there may be two dialogues going on at the same time within two dyads working in parallel). Unlike this type of learning unit the instructional one tends to flows as one central narrative thread to which all actors attend, with the teacher almost at all times in charge of this accumulation of contributions. In spite of occasional side-talk (brief conversational exchanges on the side), usually the interactive dynamic in this type of unit holds the teacher as a constant point of reference.

In the sample provided here, one can see a fairly typical instructional dynamic governing the activity. In lines 1-19, the Res sets the scene for the question almost like a quick lead-in section. Then in lines 20, 24 and 26 the question is gradually articulated after which a series of possible answers is collected from students in a fairly neat sequence with each contribution being followed by the teacher's reiteration of the students' answer. The unit typically ends with a turn from the teacher in the form of a short summary. Throughout the whole unit there are quite a few interruptions from the main line of work: a comprehension check (second half of line 20, and then lines 21, 22 and 23); discipline-related break (lines 4 and 5), student attention and involvement check (line 36). Nonetheless, in spite of various brief interruptions from the main line of inquiry, the learning activity is quite firmly kept under control.

- *Controlled maintenance of the use of the target language*

Code switching per se is a phenomenon which is largely at the discretion and disposition of the individual. Whatever the motivation for it, in every day conversations, the individual tends to be in charge of slipping in and out of the two languages. It sometimes occurs almost instinctively, a fact which becomes more visible in my data in the conversational type of interaction. In the instructional units code switching may still occur spontaneously (for example, in line 29 Mrc, whilst trying to articulate an answer through English, instantly switches to Ro to ask for linguistic assistance). However, in many instances the ratio between L2 and L1 use is monitored and re-adjusted through the teachers' requests to maintain the dialogue in the target language as much as possible. One such example can be seen in line 28 where the Res explicitly encourages Cdr to switch to the target language, i.e. reword his answer in English. Generally, the use of the target language tends to be greater in the instructional type of interaction for the obvious reasons (teacher control and support).

- *Multimodal engagement with an emphasis on linguistic expression*

The modality of expression in these units is similar to a large extent with that from the conversational dialogues. One specification may be that whilst the teacher usually encourages students to use any communication channel that they can identify, a greater emphasis is placed on linguistic expression. Usually, the target language is given prominence but at times mother tongue linguistic aspects are attended to as well.

In a different instructional unit, the students are asked to reflect on two questions regarding reasons for which castles are not being built at present as they used to be in the Middle Ages, and to speculate about the time needed in modern times if a castle were to be built.

32	**Ada**	Because building the castle is for is for ^^ *[gestures a time line]* time time ago with building a castle ^ and ^ and *[points her finger downwards gesturing 'at present']* now^^
33	**Res**	Nowadays?

34	**Ada**	And nowadays is no *[unclear gesturing]*
35	**Mrc**	Space?
36	**Ada**	wouldn't take long
37	**Res**	Let's say that again shall we
38	**T**	Ada can you re-phrase that a bit
39	**Ada**	At present it would not take so long to build a castle

[Annex 2.2H: lines 32-39]

In the above illustration, Ada's multimodal expression is accepted and indirectly praised as a valid contribution since she is encouraged to articulate it verbally for everyone to hear. The other observation that can be made here regards the move towards a better articulated and linguistically more sophisticated phrasing in L1, in this instance.

- *A systematic attempt at accessing the content*

In a conversational unit, the tendency appears to be for students to attend to a formally set task intermittently which results, in many cases, in conversational units interspersed with brief off-task exchanges. In the instructional type of interaction the teacher's performance appears to compel the students' attention. They are held tuned in through various comprehension checks until a satisfactory level of exploration is reached. Such more systematic learning attempts seem to result in a reasonably in-depth understanding of the content intended by the teacher.

- *Thinking as contingent upon the quality of teaching*

There are instances when the attention of the teacher remains at a fairly general whole class level due to constraints related to time available and number of students (e.g. ensuring that the majority of students make contributions in a lesson). When this is also combined with a somewhat less thought provoking task or question then a fairly simplistic output emerges as illustrated below.

64	**T**	*[holding up a picture]* so this is the king ad this is the queen here and this must be their dog ^ so did they they live in a hut or a tepee?
65	**Ss**	*[laughing]* nooo
66	**T**	of course not ^^ ok ^^ who are they then? *[pointing to other people in the picture]*
67	**Ss**	soldiers
68	**Dan**	warriors
69	**St**	servants
70	**T**	servants soldiers warriors good
71	**Ili**	and ^^ what the English for 'guardian'?
72	**T**	guardian ^^ guardians
73	**Mar**	and there is also a priest
74	**T**	a priest yes that's right ^^^ look what's happening here?

[Annex 2.1J: lines 64-74]

Although there is the value of having recycled some words, this unit does not take students onto a more challenging cognitive space. It elicits a list of words and stops at this (in line 74 the teacher changes the course of the dialogue).

In situations in which more thought-provoking questions are posed, the instructional interaction may look somewhat different. Going back to the sample of a whole instructional unit (Annex 2.1G), one can see that even though this still looks like a gathering of contributions from students, these contributions are fully fledged inferences hinting towards basic hypothesizing which hold potential to place the students' activity onto a higher cognitive ground.

V.4.4 Reflective learning units

Reflective learning units (RLUs) are dialogues based on metacognitive reflections. They come primarily from the follow-up interviews but occasionally these metacognitive reflections can occur in some of the classroom based activities. The dynamics and the texture of these reflective dialogues are influenced to a large extent by the student producing the reflection, as well as, to a lesser extent, by those prompting it (researcher, teacher or peers). The literature reveals an increasing recognition of the value of dialogically mediated metacognitive reflection as a tool to secure deep learning (Mercer, 2008b; Wells, 2001b&c; Alexander, 2004 and Walsh, 2006). In a somewhat similar fashion to this study, Garii (2007) involves students in the research process in the form of follow-up interviews in which students articulate their thoughts about their own learning.

The following sample is a typical instructional learning unit as emerged from the follow-up interviews in this study.

Reflective Unit Follow-up Interview 2		**AG** (Y3, aged 9)
AG was interviewed three times throughout the course of the study (in Weeks 2, 3 and 5). The entire second interview lasted 06'79". In the segment provided here the student is asked to read through part of a material about 'Wonka Tonka – The American Indian spiritual world' and reflect on the strategies used to access it. This activity was presented to the student in the interview as an extension of the lesson on American Indian Pictograph Stories.		
T=CLIL class teacher **Res**=researcher **St**=unidentified student **Ss** = usually, over 2 students in group work & over 4 students in whole class activity)		
TURNS	The Language of Expression **English** Romanian	*[nonverbal contributions accompanying the interaction]* [added explanatory insertions] ^^^(pauses) **aaa** (interjection indicating hesitation) **ahaa** (interjection indicating an eureka moment) overlapping turns **xxx**/**xxx** (unintelligible speech) **the text in bold represents emphasis** Language transfer (Romanian & English conflated words – letters &/or sounds)
19	**Res**	so what if now I gave you the text for you to have a look at and I'd kindly ask you to read the last bit here from 'the shamans' the last bit from there just read it for yourself read it however you feel more comfortable in your mind aloud it doesn't really matter up to you

20	**AG**	*[reads the fragment silently][starts giving a rendition of the text in Ro]* the Shamans from California ^^^ aa^^
21	**Res**	not to worry you don't need to translate this for me word for word just tell me what you think this is about
22	**AG**	the shamans from California had ^^some stuff ^^^ aaa
23	**Res**	what were the shamans from California doing?
24	**AG**	^^ aaa ^^^
25	**Res**	in this very instance when you are trying to understand something what are you doing?
26	**AG**	I am thinking what words are familiar to me
27	**Res**	aha ^ you are looking in the text to see what words you know ^^ anything else?
28	**AG**	and I am [thinking] ^ and then I am [thinking] ^ am making a link [between these] to see what I get kind of
29	**Res**	aha ^ to see what you get and how do you know you're happy with what you get
30	**AG**	I am also thinking from other points of view
31	**Res**	for example what other points of view?
32	**AG**	A ^^ aa ^^ a ^^ if ^^ what if ^what if ^ this were in Romanian
33	**Res**	aha
34	**AG**	[I]^ [I] ^ I ^ what ^ what ^ what ^ would I do? What words are similar because English is a bit similar to Romanian
35	**Res**	aha
36	**AG**	Or or if ^^ I ^ I'd ^ I'd ^ I would think to invent a new word in English similar to that [unknown word I am looking at] what meaning would I give it?
37	**Res**	ok ^ I see ^^ is that all?
38	**AG**	yes
39	**Res**	thank you very much

TABLE 5: Reflective Learning Unit (RLU) [Annex 4B: lines 19-39]

In the illustration above, the reflective unit is initiated by the researcher but the opportunity for a reflection break is signalled by the student. In this particular instance in the interview, the researcher sets up a mini-reading oriented task and the interviewed student is asked to inspect the material and provide an account of their understanding of the text. The student engages with the task which is used as an extension of the class activity but also as a

prompter for immediate reflection. Thus, the researcher uses the student's hesitations and pauses (lines 22 and 24) as an opportune moment for a reflective break. In this way the reflective unit generated above is initiated by the researcher but sustained by the student.

In a somewhat similar fashion to the previous subsections, I am going to explore the specific features for a reflective type of learning interaction.

- *A learning context for reflection rather than a set objective for learning*

The dual role of the reflective units generated in the follow-up interviews needs to be clarified. On one hand, these units are initiated but not driven by a research agenda in that there is an overall research aim of finding out how students go about their learning. This research interest made possible these reflective interactions in the first place. On the other hand, the texture of these units is very much the product of the students' reflective accounts, and this is what I would like to focus on in what follows.

If, on a research level as well as in classroom-based instructional units there is a set goal, these reflective units are not governed by a set instructional goal as there is no pressure on students to perform well, nor even to finalise the tasks. Rather, a classroom-like context for learning is reiterated with a view to maximising the opportunity for reflection. If the instructional units are distinctively characterised by a set goal which is safeguarded by the teacher, the reflective units appear to reveal an almost opposite tendency. Instead of starting from a set objective and seeing to its fulfilment, the reflective type of learning interaction starts from an opportunity for reflection which the teacher seizes or from an exploration of an aspect that the student elects more or less spontaneously. This creates a ground which, if explored in conjunction with a more knowledgeable other, can generate observations and learning aims on aspects which may elude the more formal type of planning. It could therefore be argued that these units are characterised by contexts with the potential to enhance reflection rather than having definite goals.

In the sample provided above, the context for reflection is a reading task on 'Wonka Tonka – The American Indian spiritual world'. Once an opportunity for reflection arises then the direction of the reflection is very much in the control of the student. If this is a reflection for research purposes, as far as the

researcher is concerned, from the student's perspective, the aim of the reflection becomes what the student makes of it.

- *Interaction with task and content at hand as catalysts for reflection*

As explained in the methodology chapter, the tasks chosen for the follow-up interviews are pitched slightly above the students' linguistic level and contain reasonably complex content. In this way, the learning encounter becomes more intense, and therefore the likelihood of a reflective need arising can be higher than in most of the classroom-based activities. Not surprisingly, these units reveal a more profound engagement with the content which in its turn creates fertile ground for metacognitive reflections.

In the illustration above, the student inspects the following excerpt:

The leader of ceremonies was the shaman (medicine man) who conducted the dances and rites. He also acted as a doctor. The shamans of California would treat a sick person by sucking out the pain, spitting it out and sending it away (from The American–Indians and the Colonists - MacDonald, 1999/ Section: North American Indians p54)

In this fragment there a quite a few phrases which students should be familiar with from their class based activities (e.g. 'leader of ceremonies', 'to conduct dances and rites', 'act as a doctor/shaman'). The very last sentence does not contain individual words which pose great difficulty. For example, 'send' is highly likely to be part of the student's active vocabulary, with 'suck' and 'spit' probably part of a more passive vocabulary set. Nonetheless, the idea here is that the student should be able to recognise them. What poses some difficulty is the notion of mystical curing these phrases describe: *'sucking out the pain, spitting it out and sending it away'.* Thus, in this particular example the challenge does not lie with new vocabulary but with a new conceptualisation of healing. The student is facing a fairly complex task here which involves recognition of chunks of language, then a reconsideration of an existing schema on medical treatment, and finally production of a summary of their understanding of it.

The reflective unit presented here illustrates the reflection generated by the student's attempt to engage with the above task. In other instances students do complete work on the task at hand, and then reflect on the process. Thus a reflective unit may contain only reflections on the process of attempting to work on a task or may contain reflections on the process of overtly carrying out that task. This is influenced by the student's readiness to participate.

- *Interaction with the MKO as a support for sustained reflection*

Engaging content and thought-provoking tasks do create a potentially rich ground for reflection, but it is the assistance from the MKO which makes possible a sustained reflection. There are instances when reflection occurs more or less prompted (by tasks, peers or teacher) in classroom-based activities but they could be described as episodic events. By contrast, the dialogic reflection generated here becomes more articulated on the part of the student as there is more scope for the MKO to follow the student's train of thought and helps them sequence and interconnect their thoughts into a connected piece of discourse about their learning experience.

In the example provided here, the researcher is trying to follow the student's stream of thought. Three types of interventions are noticeable here on the part of the MKO: constant comprehension checks, i.e. reformulations of the students' observations (e.g. line 27 aha ^ you are looking in the text to see what words you know, line 29 aha ^ to see what you get); fairly gentle prompting to carry on (line 27 ^^ anything else?, line 37 is that all?); and challenges to deepen reflection (line 29 and how do you know you're happy with what you get?).

- *L1 mediated dialogic reflection with a relatively high incidence of discourse markers indicating intense on-line thinking*

Primarily because of the limited proficiency in the target language, mother tongue remains the students' comfort zone especially when they need to engage in providing more complex explanations about their own learning actions. The use of mother tongue in the reflective units extracted from the follow-up interviews is an obvious occurrence (this is mutually agreed between the interviewer and the participants). Additionally, it is important, though unsurprising, to note that in those classroom-based reflective instances, the language students prefer to use is L1.

The features of the dialogue produced in a reflective encounter are very different from the ones generated in conversational units, for obvious reasons (e.g. number of participants and directionality of the activity). Similar as it may appear in parts to the instructional units (especially with those classroom based instructional episodes when the teacher engages with one student), the

dialogue occasionally displays some features of predicated speech especially in those parts where students reflect on the process.

Discourse markers indicative of sustained on-line thinking can be seen in the following lines chosen from the above provided reflective unit. In line 28 the student further explains the answer he gives in line 26. Whilst his utterance flows without any word repetitions, pauses, stutters or hesitations when he is in the position to nail down verbally his thoughts one can notice the increased incidence of these discourse markers particularly at the beginning of the utterance whilst the student is still formulating that particular thought. Another feature that needs to be noted here is how the utterance builds in complexity which is probably more obvious in the Romanian version. The student starts from a fairly general level as his first intended verb is 'am thinking' but he becomes more specific as he moves on and specifies what kind of thinking is going on, i.e. he is making connections between these words. This appears to me to be fairly solid proof of on-line thinking.

(L26) I am thinking what words are familiar to me // Ma gindesc ce cuvinte stiu

(L28) and I am [thinking] ^ and then I am [thinking] ^ am making a link [between these] to see what I get kind of // Si ma ^ si apoi ma ^ fac o legatura sa vad cam ce iese

Similarly in lines 30, 32, 34, and 36 the student starts with a linguistically well articulated sentence after which, when he engages in a more in-depth rendition of his thinking, these above-mentioned features of on-line thinking become more apparent. In addition, the student uses rhetorical questions which are characteristic of a kind of talk which organises thought; at times, his utterances resemble private speech and this appears to become more prominent when he engages with the task.

(L30)I am also thinking from other points of view // Ma ma gindesc si din alte puncte de vedere

(L32)A ^^ aa ^^ a ^^ if ^^ what if ^what if ^ this were in Romanian // A ^^ aa ^^ a ^^ da ^^ daca ar fi ^ ar fi in romana

(L34) [I]^ [I] ^ I ^ what ^ what ^ what ^ would I do? What words are similar because English is a bit similar to Romanian // E ^ E ^ Eu ^ ce ^ ce ^ ce as face? Cu ce cuvinte seamana ca engleza seamana un pic cu romana

(L36)Or or if ^^ I ^ I'd ^ I'd ^ I would think to invent a new word in English similar to that [unknown word I am looking at] what meaning would I give it? // Sau sau daca ^^ m ^ m-a ^ m-a^ m-as gindi sa inventez un cuvint nou in Engleza asemanator cu ala ce as ar insemna?

In brief, it can be said that unlike in the conversational units and the instructional units the elements indicative of thinking in the making are more apparent. This is not to suggest that there is no on-line thinking in the other types of learning units. Rather, this suggests that this is realised differently and therefore generates a different type of discourse.

- *An attempt to articulate thoughts about their own learning*

Earlier in this section I have described the reflective units as articulated discourse about learning on the part of the students especially in conjunction with an MKO. Nevertheless, it needs to be emphasized that while in the conversational and instructional units one can witness a more or less successful attempt to learn content, in this type of unit one witnesses primarily an attempt to verbally express thoughts about learning.

The example provided here embodies a fairly successful attempt at articulating one's thoughts about their learning, arguably, with a certain level of sophistication. There are however reflective units in which there is very little reflection. As a brief note for now, this appears to occur because of various distractions (e.g. student may be eager to go out and play), a higher linguistic ability in the target language than the average student in this project (e.g. little difficulty posed by either content or language and therefore little to think about and report); and lower overall academic ability -as identified and graded by the class teacher (e.g. students being overwhelmed by the complexities of dealing with both language and content which they perceive over their level of ability).

V.4.5 Interactive-dialogic learning units of hybrid composition

The features of the three types of learning units proposed in the previous section can be summarised as follows.

CONVERSATIONAL	INSTRUCTIONAL	REFLECTIVE
Ownership of the learning objective	Compliance with the learning objective	A learning context for reflection rather than a set objective for learning
Relatively unconfined learning space for the interaction with other actors and materials at hand	Fairly controlled learning space for the overall learning interaction	Interaction with task and content at hand as catalysts for reflection
Self-governed code-switching	Controlled maintenance of the use of the target language	Interaction with the MKO as a support for sustained reflection
Multimodal engagement	Multimodal engagement with an emphasis on linguistic expression	L1 mediated dialogic reflection with a relatively high incidence of discourse markers indicating intense on-line thinking
A novice attempt at grasping the content	A systematic attempt at accessing the content	An attempt to engage with a linguistic and conceptual task
Thinking through conversing	Thinking as contingent upon the quality of teaching	An attempt to articulate thoughts about their own learning

TABLE 6: Summary of features of specific learning units (CLU/ILU/RLU)

Although the data set provides an abundance of examples for the three types of interactive-dialogic learning units, it is crucial to acknowledge that in many instances these units are not purely and solely conversational, instructional or reflective. The data set also yields hybrid type of learning units, which is not surprising given the attempt made here to categorise and box something as

fluid as spoken discourse. These hybrid units are usually the result of a digression, addition, intervention, interruption, or a need for clarification. Thus, for instance, within a learning unit of a certain type (e.g. conversational), a loop emerges which is in fact a transaction of a different type (e.g. instructional). The whole unit has an overall aim (usually content or task bound) while a transaction deals only with part of this aim, tends to be shorter than a unit, and constitutes an integral part of the unit.

There are instances when one can witness *instructional episodes* within conversational units. For example, lines 156-169 represent an instructional episode within a conversational learning unit (lines 151-178 from Annex 1J). The whole learning unit revolves around finding out the answer to a question regarding the Celts' reaction to one of the changes brought about by the Roman occupation. The instructional episode relates only to part of this overall aim, i.e. it does not sustain the students' activity systematically throughout to the point where they produce an answer.

149	**Q8**: After occupying the Celts, the Romans built navigable inland waterways and aqueducts for which they sometimes had to change the natural course of the rivers. Why were the Celts so upset about this? **Expected answer**: they considered water sacred/ Romans tampered with nature **Cdr:** Question 8 ^^^ After occupying the Celts ^ after occupying the Celts, the Romans built navigable Iceland* ^^ inland waterways ^^
150	**Mrc:** xxxxx *[being silly suggesting through gestures the answers are on the back of the Q sheet]*
151	**Cdr:** Waterways and aqueducts ^^ look this is an aqueduct ^^ which is done by flooding the land ^^ Why were the Celts so upset about this?
152	**AG** *[reading the text on the storyboard to himself]*
153	**Cdr:** What is this saying?* Well ^^ why would they be ^^ the Celts were ^^^ I don't actually know what this word 'upset' means?
154	**Mrc** *[turns round and asks the Res]:* Upset?
155	**Res:** sad , unhappy, not happy
156	**Cdr:** In other words very upset
157	**Res:** not happy at all
158	**Cdr:** Immm ^^well ^^ Why? ^Well because they [Romans] flooded their [Celts'] roads
159	**Res:** Why? Think about what did the Celts think about the water? How was water for the Celts?
160	**Cdr:** Ahaaa ^^ sacred
161	**Mrc:** ahaaa they buried more earth underneath the water to raise the river bed and somehow then they built this bridge

162	**Res** *[following on Cdr's line of thought ignoring Mrc's contribution]:* That's right ^yes ^ and why were the Celts ^^^ the Celts loved the nature very much **they loved the nature** they wouldn't touch or spoil the nature they **loved the nature**
163	**Cdr:** The Romans replaced the old Celtic roads with waterways
164	**Res:** so what did the Romans do?
165	**Cdr**: they
166	**Mrc:** They destroyed them
167	**Res***[leaves this group heads to monitor another one]:* ok can you carry on from here
168	**Cdr:** Ahaaa because this is a dam
169	**AG** : *[reads to himself from the storyboard as not entirely convinced by Cdr's theory]*
170	**Cdr:** Yes this is a dam look at it and they [Romans] destroyed it to let the water flow
171	**AG:** Yes you are right it looks like a dam ^^before it was without this stuff [the arches/holes in the aqueduct] but now it's a dam *[compares the waterfalls picture to the aqueduct one]* and the water level came down because beforehand it was up to here *[points to the first row of arches in the aqueduct]*
172	**Cdr:** don't think so
173	**AG:** no seriously look ^^look even up to here *[points to the second row of arches in the aqueduct]*
174	**Cdr:** Not sure about that
175	**AG**: Alright then what explains the holes in the dam unless the water had to flow through that high up? *[pointing to the second row of arches in the aqueduct]*
176	**Cdr:** Alright then perhaps you're right ^^^ where's nine?

On closer inspection, there are two parts to the instructional episode in the above presented conversational unit. This is initiated by the students through Mrc's intervention who solicits a linguistic clarification (154-157). Lines 159, 162 and 164 are interventions which are made on the teacher's initiative as she happens to be closer to this group, hears Cod's contribution, picks on one key aspect 'flooding roads' and tries to direct the students' attention towards the idea of the holiness of water and nature in general for the Celts. Thus, one can notice instructional episodes (either language oriented or content-related) which can be solicited by the students or offered by the teacher monitoring the group(s) activity.

Further, one can observe *conversational spells* within instructional units and one such example is provided below (lines 1-23 from Annex 2.1J). This comes from a lesson on medieval European castles and occurs in the middle of the teacher's guided introduction aspects related to life at medieval courts. One student spontaneously grabs a turn, with other students following; these

students' string of contributions generates a dialogue which departs from the features of an instructional type of learning interaction.

1	**T**	so back then not just the king but the lords as well used to surround themselves with a powerful army knights well prepared [to protect the castles
2	**Dan**	[Do you know what I'd do if I lived back then?
3	**T**	what what would you do?
4	**Dan**	Well ^^
5	**T**	I would
6	**Dan**	I would make the wall round the ^^
7	**T**	castle
8	**Dan**	castle ^^ and some stair to *[mimes 'climbing']* for the soldiers to climb to the top
9	**T**	to get up there
10	**Dan**	to get up ^^ and from there to be able to shoot arrows
11	**T**	bow and arrows
12	**St**	a crossbow
13	**T**	yess so there were these kind of fight tactics when somebody attacked a castle the knights and soldiers were staying on the top of the walls ^^
14	**Dan**	and they had a tower in the middle to have someone to tell them '*look they are approaching from that way*'
15	**T**	ok so the guardian the watching eye
16	**Dan**	actually you'd need more than just one person to be able to cover more
17	**Ili**	or to
18	**T**	or to
19	**Mir**	or to ^^ how do you say 'to have some trees that look like humans to make the enemy believe you have a big army'
20	**Alx**	you could cut down trees and prop them up and put some hats on top of them make them look like people
21	**T**	ok to simulate ^ to disguise to cut trees and to make them look like people ^ is that what you mean?
22	**Mir**	yes
23	**Alx**	yes

With a narrower acceptance of what constitutes a conversation, the above proposed conversational spell may be regarded as a cumulative string of contributions still governed by the instructional mode (the students tend to address the teacher who remains a constant point of reference in the unfolding of the dialogue and a large portion of this is an exchange between the teacher and one student, Dan). Some of the characteristics which can individualise this as a conversational spell are as follows. There is a spontaneous initiation from Dan who brings in a digression which is not blocked by the teacher on this occasion. Further, although the teacher may remain a point of reference in the way the students take turns to throw in contributions, they are in fact predicating these contributions on input from other colleagues. Thus, in line 12 an unidentified student makes an addition ('crossbow') in relation to Dan's suggestion regarding the use of weapons which can release arrows. Dan does not specify what type of weapon; the way in which he phrases his contribution leaves this open. It is interesting to note that this unidentified student does not follow the teacher's suggestion ('bow and arrows') in a way in which often occurs in instructional type of interaction (students tend to overtly repeat or subvocalise what the teacher says). Instead this student appears to tune into what is being discussed, i.e. the use of weapons rather than echo the teacher's suggestion. Similarly, in line 19 Mir makes an addition related to Dan's theory of needing cover and in line 20 Alx further elaborates on Mir's answer. Mir suggests that 'having' some trees would create the illusion of a huge army from a distance for the enemy. Alex builds on this and makes it even more specific (by cutting these trees down and then propping them up). Most of the content is driven by the students here as the teacher's interventions appear to have more to do with providing an English version of the gist of students' contributions.

Finally, there are *reflective moments* within conversational units. These are understood in this study as any instances in which students whilst engaged with content and task at hand, express an overt reflection on any aspect of their learning. Many of these reflective instances refer to observations students make regarding their own or other colleagues' method of work. These reflective moments can translate into one line or a brief exchange.

One such example is the discussion below between three boys about the implied easiness with which one can approximate printed words in their native language as opposed to a foreign language. This reflective exchange comes from a conversational unit of thirty lines in which students are looking at elaborating a definition of the notion of making a prophecy (lines 83 -113 in Annex1J).

85	**Cdr:** What does this 'prophetic' mean? ^^^ told people about something which would happen in the future
86	**Mrc:** How do you expect me to read upside down?
87	**Cdr** *[being silly miming]:* Come on read have ago
88	**AG** : You could read upside down like you do in Ro
89	**Mrc:** Well I can't read if the text is upside down even though it's in Romanian
90	**Cdr:** I can understand what it says there [both the content of the text on the storyboard and reading it at an angle]

These reflective instances can be very brief, unattended by other colleagues and at times even dismissed as unnecessary by peers in whole class or group based activities. For example, within a conversational unit of 13 lines (35-48), a year 4 boy briefly mentions his method of approximating meaning by taking guesses (line 38 in Annex 1G: 'I just stick in words just take guesses'). This is not followed by any of his peers but promptly dismissed as 'messing about' by one of the peers in line 39.

Other times these reflective moments occur in the form of questioning the efficiency of the followed method. For example, within a conversational unit of 21 lines (108-129) there is one reflective challenge posed by a Y3 girl in line 123 regarding the method used ('Hold on guys first and foremost what does Celts mean? We keep searching for this word but we are not sure we know what it means'). This appears to be triggered by the seemingly unsatisfactory progress made in searching for an answer for that particular task. The conversational unit in which this occurs revolves around the exploration of a text and attached pictures with the aim of encouraging students to notice and discuss the relevance of the sacredness of nature for the Celts (see Annex 1K).

The main point here is that an identification of conversational, instructional and reflective units does not mean to imply that they are fixed entities always

ticking all the boxes of the delineated features. Nor do they emerge independently of one another. Therefore, the discourse of the CLIL learning experience can be conceptualised here as more than just the sum of these three types of learning units. This conceptualisation is significantly driven by the data analysed in this study and resonates with literature which notes an increasing recognition of the value of dialogically mediated learning and metacognitive reflection as tools to secure deep learning (Mercer, 2008; Wells, 2001; Alexander, 2004 and Walsh, 2006).

V.4.6 Pursued analytic dimentions and research aims

The previous sections outline the specific features of three types of learning units which embody the discourse of meaning as generated by the CLIL model in this project. An in-depth analytic coverage of all three main units would exceed the scope of a PhD paper, and it would not serve the tight focus of my investigation which rests on students' cognitive engagement. One of the main aims of this study is to appreciate the shape of this discourse generated in L2 mediated learning interactions but another equally important aim is to place enhanced lenses on the cognitive value of the students learning actions and responses. Thus, the following sections provide detailed analysis and discussion as follows: interactive patterns in the interaction with peers, the cognitive value of the learning interaction with peers and the MKO and finally the knowledges activated to support an L2 mediated type of learning. In other words, I shall specifically look at whole conversational units (peers), instructional episodes within these (MKO), and relevant reflective units which explain learning behaviour within conversational interaction or provide an extension to these.

Interactive patterns are of interest especially with reference to the conversational and the instructional episodes. The social dynamics is considered only from the point of view of the roles the students assume during learning interactions. Greater attention is paid to the dynamics resulting from learning interactions in which students specifically negotiate meaning (i.e. operate with propositional and linguistic knowledge). Thus, the analysis focuses on the dynamics of the learning interaction (sequencing of moves, transactions and the emergence of whole units) in order to see what interactive patterns of intellectual activity emerge. More specifically, the narrow focus under this analytic dimension lies on those patterns stemming from the argumentative dynamics, whereby *the syntax of thinking* is of

interest, i.e. the children's reasoning through dialogue. Thus, under this dimension the following research aim is covered.

- To identify any emergent patterns in the argumentative dynamics of learning dialogues as part of conversational and instructional units

Another dimension of interest for my analysis is the *texture of the learning interaction*, i.e. to a large extent, the substance of talk which is looked at in terms of levels of depth in processing the discourse. Under this dimension the lower/higher order thinking is considered during students' attempts to access content in the medium of English. An analysis of the cognitive processing activity is based here on what becomes observable, is reported by students or can be reliably inferred. Of particular interest is the extent to which shallow/deep learning can be witnessed as a result of conversational (largely students' independent collaborative work), or instructional (scaffolded learning through the intervention of a MKO), or reflective (intensive interaction with the task) learning interaction. The initial research aim addressed under this analytical dimension can be summarised as follows.

- To evaluate the potential that conversational, instructional and reflective types of learning interaction hold to foster higher order thinking and support deep learning under the condition when students are engaging in accessing content through the medium of English

The third analytic dimension pursued here refers to the strategies employed by these limited English students to access a L2 mediated space, and consequently on a more general level the Knowledges activated in the process of L2 mediated learning. More precisely, this aims to tease out the types of socio-cognitive mediational strategies employed in the interplay of inter- and intra- personal planes in order to process the integration of content with L2.

- To appreciate the shape of *the fluid interface between the intra- and inter- psychological planes* in the process of meaning making and map of the Knowledges underpinning the students' processing activity

VI: DATA ANALYSIS

VI.1 INVENTORY OF CLASSROOM AND INTERVIEW BASED DATA

In the Analysis Framework chapter, I mentioned that principal and support data can be distinguished in this study. In the opening of this chapter it needs to be reiterated that the analysis developed here is mostly based on principal data, i.e. transcripts of the digitally recorded learning instances (whole class lessons, group activities, and follow-up individual interviews). This is not to downplay the role of the secondary set of data such as diary entries, materials used in class and during interviews, and materials produced by students. Rather, the latter set of data is called upon in the course of the analysis for clarifications, i.e. in order to secure reasonable inferences and articulate sound interpretations.

It makes sense to start by providing an inventory of the data before moving on to sketching analytical units.

As also mentioned in the Context and Methodology chapters, over the 6 weeks of teaching we aimed at producing 3 lessons per week (i.e. 2 or one lesson for each year an alternate weeks which resulted in 18 lessons on CLIL History). Of necessity, only 15 of these lessons were transcribed and form the basis of the proposed categories. If one takes into consideration that each lesson lasts anything between 45 minutes and 50 minutes then it becomes clear that overall the classroom based data amounts to approximately 750 minutes.

In addition to the classroom based data, there are 57 follow-up individual interviews whereby nine Year 3 and ten Y4 students are interviewed three times throughout the course of the study, with each interview lasting on average approximately 7 minutes. Largely depending on the interviewed student's disposition, interview length varies between four and eleven minutes.

A point was made in the Methodology chapter about transparency and making data available for secondary research. Thus, through this study I open up a significant amount of mainly classroom based data in the form of an electronic Annex. More exactly, 499'13" worth of fine-grained transcription is offered. This translates into 255 pages of user-friendly coded verbal and non-verbal

learning interaction (Annexes 1-3). Whilst within the time and resource frame of this study it would have become difficult to have offered the whole data set, a fair selection was ensured which means that the annexes illustrate learning instances from almost all the lessons delivered. In addition, three follow-up interview samples are comprised in Annex 4 (pages 256-265). The annexes can be found at the end of the thesis on a CD and are class marked. Although usually samples of data are brought into this chapter for exemplification purposes, in some instances there are cross-references to relevant annexes especially when there is a need for a contextualisation of the chosen sample in the broader learning interaction.

VI.2 THE LEARNING INTERACTION WITH OTHERS

VI.2.1 Analytic tool and illustration of microanalysis

The following diagram synthesises the overall analytic dimensions.

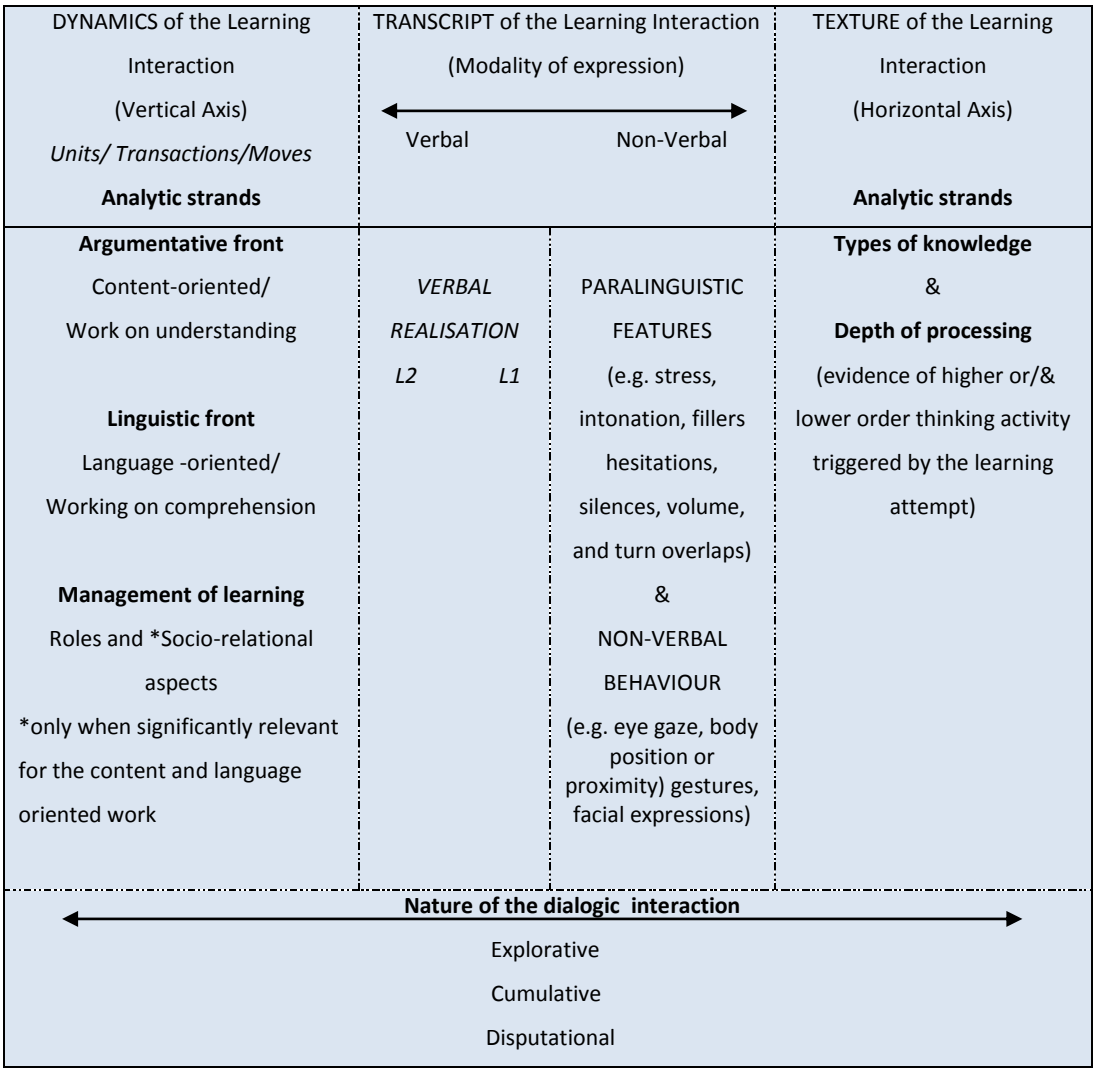

DIAGRAM 10: Specific analytic dimensions & analysis tool for the interaction with others

An illustration of applying the above microanalysis tool is going to be detailed below. The analysis is undertaken on a conversational learning unit recorded from a Y3 small group working on a quiz on China. The students are simply required to work together and attempt answers for a series of questions. The intention behind the task is to have the students investigate the poster/s (picture and attached text), draw on their prior knowledge and experiment with thinking approaches. This particular CLU is generated by the students'

work on question 2 ('Most of the Chinese houses had the doorways facing South. Can you think why?'), it lasts 02'13" and comprises 38 lines.

34	**Adw**	Let's move on to the second question *[casts a glance over the materials]* Number two, number two
35	**Rux**	*[reads out from text on the storyboard]* Most people in ancient China could not afford to live in fancy houses ^^^
36	**Adw**	*[interrupts Rux and starts reading the Q]* Most of the Chinese houses^^^
37	**AG**	She didn't even get a chance to finish the text
38	**Mrc**	*[in reply to Adw's reading of the Q]* Most? What does most mean?
39	**Rux**	We can't talk and answer the question without reading this first *[uses a friendly tone of voice]*
40	**Adw**	*[Ignores Rux, teams up with Mrc ,rereads]* Most of the Chinese houses had the doors facing South. Can you think why? *[goes off and asks the Res]* What does it mean 'most'?
41	**Mrc**	*[walks along with Adw to the Res who is monitoring the work of another group]*
42	**Rux**	*[Rux ignores the boys in her turn and carries on reading the text to herself in a quieter voice]* Most people in ancient China could not afford to live in fancy houses. They lived in small houses made of mud brick, with only one room and a dirt floor, just the way most people in Europe or West Asia or Africa lived, and the way most people in the world still live today.
43	**Res**	*[accompanied by gestures of counting fingers to suggest lots]* What does ^ which word? ^^^ Many many of the Chinese many yes? Many many many ^ yes?
44	**Adw**	So ^ many of the houses Chinese-ilor have doors facing South. Can you think why?
45	**Rux**	ok so we are on **this second one** now alright *[joins Adw&Mrc]*
46	**Adw**	Ahaaa ^^^ so we need to be talking about these houses
47	**Mrc**	Not just that we need to say why they haven't got any houses and why the houses haven't got any doors
48	**Adw**	Actually we need to be saying why the houses haven't got any doors and windows The ^^ the Chinese house
49	**Mrc**	The Chinese is little
50	**AG**	*[facial expression indicting disagreement]* It is big ^^ it is ^^^ it is twice it is four times the size of Romania

51	**Rux**	Boys, boys where does it say 'windows' in the text
52	**Mrc**	Yes ok China the country is bigger but how about the people ^ how do you know
53	**AG**	People are four times ^ oh hang on ^ Oh God ^ twenty two times more than the Romanians
54	**Rux**	*[reading through Q3 while the boys are having this debate on the population of China]*
55	**Mrc**	*[to AG]* Are you saying they are twice as tall as we are?
56	**AG**	Oh no no I mean twenty two times larger than us as number of people
57	**Mrc**	Ok yes yes but they are tiny people
58	**AG**	*[facial expression indicting disagreement]*
59	**Rux**	Shall we leave this question for last?
60	**Mrc**	Because it's little
61	**Rux**	Because it's little *[intonation indicates tentativeness]*
62	**Adw**	*[in a firm voice indicating confidence]* Because is little ^^^ the house of China is a little
63	**Mrc**	Yes
64	**Rux**	You didn't even read the whole text for this question! *[in reply to the boys' elaboration of the answer]*
65	**Mrc**	This is the trad ^^^ this is *[struggles for the word 'tradition' and goes off to ask the Res]* What's the English for 'tradition'?
66	**Res**	Tradition
67	**Mrc**	This is tradition ^ is little house ^ this is tradition
68	**AG**	They have big doorways have a look for yourself and measure it *[points on the poster to the picture of a poor family's house]*
69	**Mrc**	*[does the measurements]* Oh yes the door of that [poor family's house] is twice the size of that [wealthy family's house]
70	**Adw**	No not really because it's different perspectives in these 2 pictures one [poor family's house] is a close up and the other one [wealthy family's house] is seen from a distance
71	**AG**	Ok it means the answer is good then. Let's move on to 3, shall we?
72	**Rux**	Look it's showing us more about China *[appears to be looking at the picture related to Q 5]*
73	**Mrc**	So ^^ this is a tradition ^ a small house *[still on Q 2]*

[Annex 1O/Q2: lines 34-72]

VI.2.1.1 The dynamics of the learning interaction

Three main strands appear to be intertwined in the dynamics of this learning interaction, each of which is going to be documented as follows.

The Content-related work strand - detailed analysis

Moves/ Student code name		Relevant exemplification from transcript	Analytic Strand / TRANSACTIONS The content-related work/argumentation
35	**Rux**	Most people in ancient China could not afford to live in fancy houses ^^^	**TRANSACTION 1A** = Clarification of the focus of the topic (Moves: 35,36,40,42,44,46,47,48a) Initiates engagement with the text on the storyboard
36	**Adw**	Most of the Chinese houses^^^	Initiates engagement with the question
40	**Adw**	Most of the Chinese houses had the doors facing South. Can you think why?	Remains focused on the question
42	**Rux**	Most people in ancient China could not afford to live in fancy houses. They lived in small houses made of mud brick, with only one room and a dirt floor, just the way most people in Europe or West Asia or Africa lived, and the way most people in the world still live today	Remains focused on the text
44	**Adw**	So ^ many of the houses Chinese-ilor have doors facing South. Can you think why?	Tightens focus on question
46	**Adw**	Ahaaa ^^^ so we need to be talking about these houses	Clarification of the focus of the topic ('these houses')
47	**Mrc**	Not just that we need to say why they haven't got any houses and why the houses haven't got any doors	Addition to Adw's clarification of the focus of the topic (houses with no doors)
48a	**Adw**	Actually we need to be saying why the houses haven't got any doors and windows	Addition to Mrc's clarification of the focus (two elements: houses with no doors or *windows*)
48 b		The ^^ the Chinese house	**TRANSACTION 2A** = attempt to initiate the elaboration of an answer (Moves: 48b, 49) Initiates answer for the question

49	**Mrc**	The Chinese is little	Proposes answer
	AG		**TRANSACTION 3A** = digression from articulating an answer to Q2 (a series of clarifications around the size of the country, of the population and of an average Chinese person (Moves: 50a&b)
50a		*[facial expression indicting disagreement]*	Expresses disagreement with Mrc's proposed answer
50b		It is big ^^ it is ^^^ it is twice it is four times the size of Romania	Proposes alternative answer
51			**TRANSACTION 1B** = attempt to sustain further clarification of the focus of the topic (Move: 51)
	Rux	Boys, boys where does it say 'windows' in the text	Attempt to sustain further clarification of the focus of the topic (neither the question nor the text mention anything about windows) which shows active listening to peers discussion and actual engagement with the text on her part
	Mrc		**TRANSACTION 3B** = continuation of digression (China country/population/ average person size) (Moves; 52a, 52b, 53, 55, 56, 57a, 57b,58)
52a		Yes ok China the country is bigger	Accepts AG's argument re China as a country being large
52b		but how about the people ^ how do you know	Further challenges AG to provide argumentation/justification
53	**AG**	People are four times ^ oh hang on ^ Oh God ^ twenty two times more than the Romanians	Takes the challenge and provides exemplification to justify his claim
55	**Mrc**	*[to AG]* Are you saying they are twice as tall as we are?	Asks for specific clarification
56	**AG**	Oh no no I mean twenty two times larger than us as number of people	Provides clarification (that population size is meant)
57a	**Mrc**	Ok yes yes	Accepts AG's argument re the size of the population
57b		but they are tiny people	Clarifies position by restating his initial point (re stature of a person–move 49)
58	**AG**	*[facial expression indicting disagreement]*	Unexplained doubt re Mrc's line of argument
60			**TRANSACTION 2B** = articulation of an

			answer for the task at hand (Moves: 60, 61, 62, 63, 65, 67)
	Mrc	Because it's little	Restatement of initially proposed answer (in move 49)
61	**Rux**	Because it's little *[intonation indicates hesitation]*	Follows peer's (Mrc's) lead but not entirely convinced
62	**Adw**	*[in a firm voice indicating confidence]* Because is little ^^^ the house of China is a little	Supports peer's answer proposal
63	**Mrc**	Yes	Expresses agreement with the emphasis added in this elaborated version of his answer (that the houses are defined as little)
65	**Mrc**	This is the trad ^^^ this is	Elaborates on agreed answer by suggesting in an inductive manner a link between small houses and the notion of tradition
67	**Mrc**	This is tradition ^ is little house ^ this is tradition	Establishes the link between (tradition and small houses)
68	**AG**		**TRANSACTION 4** = digression (size and perspective/ dilemma re size of the door of a hut vs. size of the door of a wealthy household) (Moves: 68, 69,70, 71)
		They have big doorways have a look for yourself and measure it *[points on the poster to the picture of a poor family's house]*	Direct challenge to Mrc's argument that houses are small
69	**Mrc**	*[does the measurements]* Oh yes the door of that [poor family's house] is twice the size of that [wealthy family's house]	Accepts AG's observation re the size of the doors of the two types of houses as valid
70	**Adw**	No not really because it's different perspectives in these 2 pictures one [poor family's house] is a close up and the other one [wealthy family's house] is seen from a distance	Offers resolution by explaining this is a question of perspective (angle and distance)
71	**AG**	Ok it means the answer is good then.	Indirectly suggests that he finds Adw's explanation convincing
			TRANSACTION 2C = Reinstatement of answer agreed in Transaction 2B (Moves: 71, 73)
71	**AG**	Ok it means the answer is good then.	Dismissal of challenge posed in transaction 4 to the answer articulated in transaction 2B
73	**Mrc**	So ^^ this is a tradition ^ a small house	Reinstatement of agreed answer

The transactions identified here uncover the following division of the content-related work: clarification of the focus of the topic (transactions 1A&B),

formulation of answer (transactions 2A–initiation, 2B-articulation & 2C-restatement), and digressions (transactions 3A&B and transaction 4). Some of the functions served by the moves identified under this content-oriented stand are as follows: initiations, answer proposals, additions, conceptual clarifications, further-elaborations, challenges, agreement or disagreement, justifications and resolutions.

The Language-oriented work strand - detailed analysis

TRANSACTION Moves/ Student code name		**Relevant exemplification from transcript**	**Analytic Strand / TRANSACTIONS The language –oriented work**
38 TR 1A	**Mrc**	Most? What does most mean?	Asks peers for help with an L2 unknown word 'most'
40 TR 1A	**Adw**	What does it mean 'most'?	Asks Res to help with the unknown word identified in move 38 Deliberate code switching
43a	**Res**	What does ^ which word? ^^^ Many many of the Chinese many yes? Many many many ^	Provides linguistic support (synonym) for 'most'
43b TR 1A		Yes?	Checks comprehension through L1 – affectively reassuring
44 TR1A	**Adw**	So ^ many of the houses Chinese-ilor* have doors facing South.	Rephrases part of the question in L1 for a deeper understanding/fixation *Translanguaging Spontaneous code switching into L2
47 TR1A	**Mrc**	Not just that we need to say why they haven't got any houses and why the houses haven't got any doors	Slightly ambiguous phrasing in L1
48a TR1A	**Adw**	Actually we need to be saying why the houses haven't got any doors and windows	Rephrases in L1 Mrc's ambiguous formulation from the previous move
48b TR2A		The ^^ the Chinese house	Deliberate code switching into L2 in preparation for the answer to be reported
49 TR 2A	**Mrc**	The Chinese* is little	Sustains L2 as a medium of expression *Ambiguous phrasing

50a TR 3A 50b TR 3A	**AG**	It is big ^^ it is ^^^ it is twice it is four times the size of Romania	Phrases his answer in basic L2 Switches to L1 because of the mismatch of complexity between his argument and the linguistic resources available to him
51 TR 1B	**Rux**	Boys, boys where does it say 'windows' in the text	Searching for L2 key words in the text
55 TR 3B	**Mrc**	*[to AG]* Are you saying they are twice as tall as we are?	L1 to L1 Comprehension check through rephrasing
56 TR 3B	**Mrc**	Oh no no I mean	Explicit discourse marker 'I mean' used to signal clarification
60 TR 2B	**Mrc**	Because it's little	Initiates transfer of answer into L2/deliberate code switching
61 TR 2B	**Rux**	Because it's little *[intonation indicates hesitance]*	Almost sub-vocalised repetition of Mrc's words
62 TR 2B	**Adw**	^^^ the house of China is little	Syntactic elaboration at sentence level (places the subject)
65a TR 2B 65b TR 2B	**Mrc**	This is the trad ^^^ this is What's the English for 'tradition'?	Attempts phrasing of elaborated answer in L2 Asks the Res for support with one word ('tradition')
66 TR 2B	**Res**	Tradition	Provides support
67 TR 2B	**Mrc**	This is tradition ^ is little house ^ this is tradition	Attempts a more complex syntactic structure in L2 formulation
73 TR 2C	**Mrc**	So ^^ this is a tradition ^ a small house	Use of L1 'so' to organise thought; Attempts to create a grammatically more complex utterance

As illustrated above, the generation of moves representing work on language is intensified in those transactions specifically focused on clarifying the focus of the topic and formulating the answer, i.e. transactions 1 and 2. Based on this example, the moves specialising in linguistic work serve the following functions: peer and teacher-oriented requests for help with unrecognised or unknown L2 phrases/words, peer-directed explicit and implicit requests for linguistic clarification in both languages, and unsolicited provision of linguistic clarification on one's own initiative through rephrasing in both languages.

The management of the learning process strand - detailed analysis

TRANSACTION/ Moves Student code name		Relevant exemplification from transcript	Analytic Strand / TRANSACTIONS The management of the learning process
34 TR 1A	**Adw**	Let's move on to the second question *[casts a glance over the materials]* Number two, number two	Initiates CLU/ opens TR1 orientates the group
35 TR 1A	**Rux**	Most people in ancient China could not afford to live in fancy houses ^^^	Follows Adw's lead and moves on to question 2; Identifies the text as the relevant place to start
36 TR 1A	**Adw**	Most of the Chinese houses ^^^	Interrupts Rux; Identifies the question as a more relevant place to start
37 TR 1A	**AG**	She didn't even get a chance to finish the text	Makes a judgement as to the adequacy of the two competing methods of approaching the task Challenges Adw's move (as a premature interruption)
38 TR 1A	**Mrc**	*[in reply to Adw's reading of the Q]* Most? What does most mean?	Shows implicit support for Adw's choice of method as although his questions is a linguistic one it relates to Adw's selected content for focus
39 TR 1A	**Rux**	We can't talk and answer the question without reading this first *[uses a friendly tone of voice]*	Challenges the learning method chosen by the Mrc+Adw dyad; Provides justification
40 TR 1A	**Adw**	*[Ignores Rux, teams up with Mrc ,rereads]* Most of the Chinese houses had the doors facing South. Can you think why? *[goes off and asks the Res]* What does it mean 'most'?	Ignores challenge from Rux; Dyad sealed (Mrc+Adw follow their own preferred method, i.e. starting from the question)
41 TR 1A	**Mrc**	*[walks along with Adw to the Res who is monitoring the work of another group]*	Shows support for Adw's line of work by simply following him to the Res where Adw asks the meaning of 'most'
42 TR 1A	**Rux**	*[Rux ignores the boys in her turn and carries on reading the text to herself in a quieter voice]*	Withdraws in individual mode and follows own preferred method
44 TR 1A	**Adw**	So ^ many of the houses Chinese-ilor have doors facing South. Can you think why?	Shifts focus from language (see move 43 where the Res provides linguistic support) back to content, thus maintaining control over the main focus of their CLU

45 TR 1A	**Rux**	ok so we are on **this second one** now alright *[joins Adw&Mrc]*	Joins the dyad Ensures they are all on the same page (i.e. sequence 2 on the storyboard)
46 TR 1A	**Adw**	Ahaaa ^^^ so we need to be talking about these houses	Clarification of the focus of the task (i.e. exploring/generally discuss 'we need to be talking')
47 TR 1A	**Mrc**	Not just that we need to say why they haven't got any houses and why the houses haven't got any doors	Addition to Adw's clarification of the focus of the task (i.e. an explanation is required of them 'need to say[...] why')
51 TR 1B	**Rux**	Boys, boys where does it say 'windows' in the text	Implicit challenge of peers' followed method by indirectly suggesting inconsistency; Lack of confidence as she poses this in the form of a question
59 TR 3B	**Rux**	Shall we leave this question for last?	Tries to bring closure to digression (Transaction 3B); **Notices difficulty and proposes that the question should be left for later as an efficient method to move on with the task at hand
60 TR 2B	**Mrc**	Because it's little	Brings the group work back on track from digression (Transaction 3B)- the use of L2 is a signal for moving on to articulating an answer for the task at hand
64 TRs 1&2	**Rux**	You didn't even read the whole text for this question! *[in reply to the boys' elaboration of the answer]*	Challenges the soundness of the followed method
71	**AG**	Let's move on to 3, shall we?	**Signals closure
72	**Rux**	Look it's showing us more about China *[appears to be looking at the picture related to Q 5]*	**Looks ahead to estimate how much more they have left to deal with
73 TR 2C	**Mrc**	So ^^	Use of 'so' framing closure to the activity (wrapping up the agreed answer)

Generally the moves identified in this CLU revolve around managing the task and regulating the group cohesion. Some more specific functions are as follows: signalling initiation/continuation/closure of transactions, requesting/offering clarifications regarding the focus of the task, proposing/challenging/supporting method of work, and maintaining/breaking

down group-cohesion. In addition, the socio-relational dynamic is interesting to observe, i.e. the roles the students assume and the extent to which these roles influence the course of a learning action. Here there is a fairly strong dyad through Mrc and Adw's teaming up but also two equally strong individuals (AG and Rux), if less verbal. While Mrc and Adw appear to assume the leading role of those more confident with the use of the target language and therefore the production of an answer, AG remains an understated content expert with Rux also acting as an audit throughout the activity particularly in relation to the soundness of the followed method.

***

A couple of points need to be made here regarding the functions of the moves across transactions and the three explored strands. As pointed out earlier in this chapter (learning units of hybrid composition), discourse entities cannot be classified in neat categories.

Some moves can belong to two transactions (see move 71 under the content-related strand). This move serves two functions, once it belongs to transaction 2C and functions as a dismissal of the challenge posed in transaction 4 to the answer articulated earlier in transaction 2B. In addition, this move also belongs in transaction 4 where it operates as an indirect acceptation of a point (AG implicitly accepts Adw's explanation as valid).

It may also happen that a certain move which is generated within a specific learning unit serves a stronger function outside that particular unit, at the level of the overall task at hand. For instance, move 71(AG) under the management of the learning strand may serve the function of bringing closure to transaction 4 but it also has to do with the management of the overall task (that of going through a whole quiz with several questions). Moreover, there are moves such as Rux's move (72) which are not tied down to a particular unit; rather they relate to the management of the overall task. Rux's move here represents a soft persuasion regarding their progression through the quiz as she implies that there is much more on China that follows. Thus, it becomes obvious that this move performs an organising function which extends beyond a particular transaction and even learning unit.

It also appears, based on the above illustration, that certain moves can have different functions across the pursued analytic strands. Particularly the analysis of the content and the language strands reveal moves with a double function, a few such examples being clarification of the focus of the topic and rephrasing in L1 (see moves 48a), clarification of intended meaning in L1 through explicit use of discourse markers (see move 56), elaboration of alternative answer through phrasing in L1(see move 50b), challenge posed to one's proposed argument through phrasing in L1 (see move 52b), answer proposal or reinstatement of it and initiation of L2 use (see moves 49 and 60 respectively), elaboration of answer through L2 phrasing (see moves 65 & 67), reinstatement of answer and enhancement of the complexity of the L2 used linguistic structure (see move 73). The above examples suggest a very strong bond between content and language related work, as many moves appear to be sustaining both strands simultaneously. The more cognitively challenging content-oriented work appears to be sustained mostly through L1 phrasing, although as shown above there are instances when elaborations on content are carried out through L2, if basic structures are used. L2 phrasing seems to play a greater role in signalling answer proposals or summaries of agreed answers. The cognitive role of both mother tongue and L2 roles are going to be discussed in more detail later on.

The above provided CLU reveals a strong bond between linguistic and conceptual work through moves that perform a double linguistic and propositional function. As far as the management-of-the-learning process is concerned, the main function which moves seem to perform is that of a cohesion regulator with the purpose to sequence and pace the content/linguistic workout. For instance, moves 43, 45 and 71 have the role to organise the learning activity in terms of sequencing, i.e. progression through the CLU.

There are moves which perform two functions: one under the management of the learning strand and another under the language strand. An illustration of this is move 51 in which Rux is looking for some key words but at the same time her utterance suggests implicit challenge to the method in use. Similarly in move 38 by asking for support with an unrecognised word, Mrc is expressing implicit support for Adw's method as 'most' is a word needed for them to understand the question. Further, some moves play a dual role under the content and management of the learning strands; for example,

move 46 makes reference to both focus of the topic ('these houses') and focus of the task ('we need to be talking about [them]').

Finally, move 73 (So ^^ this is a tradition ^ a small house) is a good exemplification of how closely and intricately these three stands come together as this particular move performs a linguistic, conceptual and managerial function.

Firstly, the move serves the purpose to reinstate the agreed answer as far content is concerned ('so' is used here as a discourse marker to signal the introduction of an almost inferential type of conclusion, i.e. a summary of student's agreed answer). Secondly, from a linguistic perspective, the move provides an L2 phrasing of the agreed answer. Finally, as far as the management of learning is concerned, the move but particularly the discourse marker 'so' appears to serve two roles: on one hand, it appears to briefly support Mrc's organisation of thought ('so' as a linguistic device deployed in L1 and followed by pausing appears to indicate that Mrc is also using this as a filler to organise the production of an L2 utterance), and on the other hand, it signals closure for this CLU ('so' as a topic sequencer).

In short, a noteworthy observation here would be the alternative functions which moves seem to perform between transactions, across analytic strands as well as beyond the learning unit in which they occur.

VI.2.1.2 The cognitive value of the learning interaction

If one looks at evidence indicative of higher order thinking in this CLU, the transactions that stand out are the two digressions. In the first digression (transaction 3A+B/moves 50, 52, 53, 55, 56, 57, 58), one can note AG's on-line thinking as he estimates in move 50b the size of China by comparison to Romania, and later, in move 53, the size of the Chinese population in contrast with the size of the Romanian population. In appreciating the area of the Chinese Republic, he increases his estimation exponentially from twice to four times which is not accurate as the area size of China is 40 times larger than that of Romania, but which shows a good sense of approximation. Similarly, on the size of the Chinese population, AG's moves swiftly from appreciating it as 4 times larger to estimating it as 22 times larger than the population of Romania which again are not accurate facts because the Chinese population is 70 times larger than that of Romania. However, the massive jump from 4 to 22 as a multiplication factor which is bridged by the exclamation 'oh hang on ^ oh God', clearly shows an acute realisation of the significant difference in proportions between the two countries. Thus, what AG does here is not pure 'guesstimation' but a fairly complex estimative judgement in which previously acquired geographical knowledge and mathematical skill play a part. In the same digression, in move 52b, Mrc's question 'how do you know' challenges AG to justify his answer, i.e. to provide evidence for his statement.

In the second digression (transaction 4/moves 68, 69, 70, 71), one can note Adw's critical evaluation of a dilemma which arises. Both AG and then Mrc seem to agree that there is conflicting information between what they know in general or from lessons and the representations on the storyboard where the picture of the hut is larger than that of the wealthy household. Adw provides a resolution by pointing out that this inconsistency stems from the fact that the two houses come as separate pictures, and therefore do not have a common frame of reference perspective wise (distance and angle). This shows good spirit of observation on AG's part, a positive attitude towards inquiry through acceptance of a challenge on Mrc's part (move 69), and equally important, effective application of more abstract knowledge from drawing and geometry on Adw's part.

I have labelled these transactions as digressions because they turn aside from the narrow focus of the task at hand (providing a rationale for having south-

facing doorways in the Chinese huts). Nevertheless, the digressions in this CLU are not completely off-task rather they remain within the students' broader learning focus which is ancient Chinese civilisation and therefore they can be regarded as explorative extensions of the task at hand. Thus, transaction 3 is generated around aspects related to population size, average person appearance, and size of the country all in relation to China. Similarly, transaction 4, which stems from describing Chinese houses as little, generates a discussion in which they compare and contrast different types of households (the size of doorways in wealthy households and huts) which remains still relevant to the broader focus of the lesson.

Outside the digressive transactions, it is interesting to note the inductive type of thinking displayed by Mrc's link between 'small houses' and 'tradition'. The question around which this unit is created does not require them to explain the size of the houses rather the south-facing positioning of the doorways, and consequently the provided materials do not comprise any inbuilt clues as to any rationale for small houses. In the absence of any explicit hints, Mrc appears to make an inference against the broader context of the history lessons in which one cannot go too wrong if they assume certain features are associated with the tradition of that particular civilisation or country.

The cognitive richness of this unit derives not only from mostly content-related work, but also through work with both content and language undertaken simultaneously as in many instances it is difficult to separate the two in standalone strands. One such example comes from students' engagement with ambiguity in which students appear to be targeting both conceptual and linguistic comprehension. Gradually and collaboratively, and not always as a result of systematic action, students seem to seek to minimise gaps loaded with ambiguity and clarify both content and language. In move 49, 'The Chinese is little', Mrc means the average person's stature but his elliptic phrasing in L2 takes AG on a different route (as he reads into it size of the country in move 50) which then gives rise to a need for clarification between the two. Similarly, Mrc's move 52b, delivered through L1 this time, does not carry sufficient explicitness ('how about the people') as he does not make it clear for his peers what aspect related to people he has in mind. Mrc's intended meaning remains the same as in move 49, but AG interprets 'people' in this loosely phrased question as size of the population which then calls for further clarification. Another example of laconic phrasing which leaves room for interpretation and negotiation of meaning is AG's move

53 'People are [...] twenty two times more' is followed by a comprehension check in move 55 from Mrc which is then succeeded by further-clarification from AG move 56. In all of these instances, one aspect that is noteworthy is the analytic difficulty to demarcate linguistic comprehension checks from checks on comprehension of propositional knowledge. Further, based on this particular learning unit it can be argued that a certain level of ambiguity which prompts a need for further discussion and clarification may be productive if there is sufficient engagement and resourcefulness on the part of the students to engage with it.

If a narrower view of successful content-related work is taken, then a further observation needs discussing. The task at hand requires them to find out why Chinese huts had doors facing south for which they do not provide an answer. The agreed answer of this group refers to the size of the huts, and even though Mrc establishes inductively a link between 'small houses' and 'tradition' this does not read as a fully-fledged argument but rather as a circular type of argument in move 67 ('This is tradition ^ is little house ^ this is tradition' which appears to be saying 'Because the tradition requires it the houses in China are little so this must be the tradition'). What Mrc lacks here is a third element to be able to create a sounder inferential link either by moving from general to particular (deductively) or from particular features to generalisations (inductively). For example, under a deductive reasoning route this could have been elaborated as follows: 'It was traditional in ancient China for ordinary people to have small homes, and therefore there was little storage room in each house'. Conversely, on an inductive route, this may have looked as follows: 'Most of the houses in this village/area are small, and therefore this must be the tradition'. One may argue that it is the restrictive nature of a limited proficiency level in the target language that accounts for this oversimplification in Mrc's expression of his thoughts which cannot be equated with his actual thinking. The student however clarifies in the follow-up interview that the intended meaning is a simple link between tradition and small houses which strengthens the observation that, in this particular case, it is not the use of L2 which restricts the student from more complex reasoning. Rather the student in conjunction with his peers initiates but fails to fully sustain either an inductive or deductive line of reasoning.

Adopting a linguistic angle on this CLU, two kinds of code switching become more apparent: a deliberate one and a more spontaneous way of slipping in and out of the two languages. The former is very much determined by the

format of the task, i.e. a requirement to report to class their agreed answer in L2. It stands out as a more staged move, in preparation for an answer to be broadcast, and is a result of a conscientious individual choice (move 48/Adw) and sustained through implicit group consensus (moves 49/Mrc and move 50/AG both of whom maintain the use of L2).

The latter kind of code switching looks more instinctual and sudden, without an overt decision to code switch, and appears to emerge especially when students concentrate primarily on their own train of thought or the line of the argument as developed by the group. Moves 50a and 50b are a good illustration of this as AG conforms and carries on in L2 for half of the line but then in the middle of the line he switches to L1 because of the mismatch of complexity between the complexity of his argument and the linguistic resources available to him in the target language. This connects with a point just made earlier that L2 does not necessarily have to act as a barrier in the way of expressing complex thinking as it appears students do revert to L1 spontaneously should the need for a more complex linguistic structures arise. Moreover, concentration on one's train of thought may sometimes result not only in swift code switching but also in translanguaging as it can be seen in line 44 (So many houses of Chinese-ului people have doors facing South. Can you think why?). Adw clarifies through Romanian part of the focus of the topic, slips into L2 as he lifts chunks off the available text, but the bridge he creates between the two is interesting as it looks like a verbalised transition from one language into the other. It could be that the switch from Romanian into English has to do with the fact that the English version 'doors facing south' is a much more economic way of phrasing this idea than in Romanian where the equivalent would be 'usi orientate catre sud', and in which inflexion is needed twice for both noun and verb. In the instance in which Adw collates an English word with a Romanian inflection this may be so because of him not being able to form a genitive construction to show possession in English, and therefore he borrows it from Romanian (Adw: deci ^ multe casele Chineseilor astora have doors facing south /So ^ many of the houses of these Chinese-ilor have doors facing South).

In addition to code switching, there is evidence here of attempts to elaborate on L2 which is indicative of students' awareness of higher levels of expression and an interest to move towards more sophisticated language. For example, in move 67 Mrc attempts to formulate a more complex phrasing in L2 (This is tradition ^ is little house ^ this is tradition) which seems to be trying to articulate ('It is traditional for people in China to have small houses so that's why this house is small because it

represents what is traditional'). Mrc's string of 3 simple sentences within which most elements are in place lack the necessary cohesive devices that would merge them into a more complex structure but remains nonetheless a good attempt, if incipient, at creating a complex sentence.

Besides the content and the language oriented consideration, the management of learning indicates some higher order thinking activity. For example, in line 39 Rux not only challenges the method chosen by the dyad (Mrc and Adw) but she also provides a justification (the necessity of consulting the available materials before one initiates an answer. Further the same student in line 59 demonstrates a complex evaluation of an interactive situation between peers as she is trying to bring closure to what she appears to have perceived as a potential source of strong disagreement. Further to this, Rux undertakes a brief assessment of the amount of work they are expected to carry out as part of the overall task and gently encourages the boys to leave the more difficult questions for last.

Borrowing Mercer's framework (2000), overall this conversational learning unit seems to display some features of explorative and cumulative talk with only soft disputational tendencies but which are well managed by the members of the group. Contributions such as sustained exertion to tune into a peer's AG's train of thought (moves 52 & 55 Mrc trying to follow AG's line of reasoning) and challenges for rationalising one's answer proposals give the explorative nature of this unit. Next, the unit bears features of cumulative talk as students' contributions gradually come together to articulate the final answer (see Mrc's further elaboration in line 65 of Adw's answer proposal from line 62). There is but only a mild disputational element in this unit mostly around the followed method of work (see the separation at the beginning of the unit when the dyad follows the question and Rux chooses to follow the text). However, differences of opinion in this unit appear to be well handled to the point to which they are a catalyst for further discussion and clarification. Finally, it needs to be emphasized that students draw on various types of knowledge in the course of this learning exercise (historic/geographical, arts/geometry, linguistic, and discoursal).

Finally, given the cognitive engagement analysed above, it could be argued that as a group and also individually, there appears to be evidence in this CLU that the students engage with higher order thinking from different perspectives linguistically, conceptually and metacognitively. There are surely

pedagogical considerations such as determining the terms in which one defines successful learning, and therefore evaluate the value of different types of engagement in learning but I shall commit to such discussions in a subsequent chapter on the conceptualisation of good learning and implications for the CLIL pedagogy.

This subsection has centred on one sample of a conversational learning unit and analysed two main dimensions: dynamics and the nature of the learning interaction. In the following two sub-chapters I shall pursue the same two dimensions but this time throughout all of the conversational units identified in this study, and I shall discuss at length the proposed categories.

VI.2.2 Patterns in the learning interaction with peers

Having provided an example of a detailed microanalysis based on one sample in the previous sub-section, I shall now change perspective and start from a bird's eye view by indicating that on a more abstract level, a tentative overall template for a conversational unit could be inferred based on the CLUs identified from the generated data in this project. I shall then look at the interplay between the three stands at CLU level and finally, I shall concentrate on each strand in order to illustrate some of the more common patterns within each.

For all provided examples of analysis in this section, the corresponding full scripts can be found in the Annexes attached to this thesis.

VI.2.2.1 CLU structure and representation of strands

As already explained, a CLU here includes all or at least two of the following strands: argumentative (content-grounded work), linguistic (language-oriented work), management-of-the-learning process, digressions and instructional episodes. One contribution from a student is regarded as a move which either in its entirety or parts of it can fall under one of the strands mentioned above. In other words a move (or parts of it) may attend to one or all three main strands (content, language and management-of-learning). These stands are differently represented across CLUs in that there may be a

balanced representation of all three strands in any one CLU, or one strand may come to the fore at any one time. A typical CLU is a combination of elements from at least two strands as follows:

Content-related work/Argumentation Mostly full transactions	**Language–oriented work** Some transactions but mostly exchanges and moves	**Management-of-the-learning process** Some transactions but mostly exchanges and moves	**Instructional episode**
Identification of content focus Breaking down of the content focus Negotiations around understandings of the content Provision of answers/solutions Negotiations around competing answer proposals Topic related digressions	Basic key word search in L2 L2 comprehension checks(translations) L2 support with pronunciation, spelling reading aloud Paraphrasing in both languages Elaborations of L2 structures Linguistic challenges re the use of both languages Brief reflections re the use of L1/L2 Digressions fuelled by linguistic observations	Group management (negotiation of roles allocation of turns generation of dyads maintenance of cohesion) Management of individual learning space/tools (brief 'think alouds' to organise train of thoughts/actions) Activity/task management (clarification/interpretation of instructions) Material management Disputational digressions	On-the-spot teacher intervention

TABLE 7: Representation of strands across CLUs

Based on the above shown types of transactions (exchanges and moves) an overall template of a conversational unit can be inferred, mostly in terms of its component elements: Group organisation // Exploration and negotiation of content and/or task focus // Exploration and negotiations around understanding/interpretation of content // Meaning and/or form based linguistic work on comprehension // Argumentation based exchanges (answer proposals, challenges, and justifications) // Instructional episode // Digressions.

In terms of sequentiality, there is significant variation in the way in which content/language/management transactions follow and determine each other. For instance, a unit may start with an organisational exchange which can be followed by transactions negotiating the focus of the task/content; this sequence is usually explained here by certain groups' tendency to maintain a strong managerial stand throughout their activities thus framing the activity first (allocating roles, sequence of turns, arranging materials) and then engaging with the content at hand. At the same time, there are units which start with content-focused transactions and any managerial exchanges emerge as and when a certain need arises. Similarly, there is variation in the way in which the content-grounded and the language-oriented transactions are sequenced. It appears to be often the case that students do maintain a focus on content and allow this to drive their activity, in which case many of these content-grounded transactions subsume language-oriented exchanges which usually represent brief comprehension checks. Nevertheless, there are instances when language-oriented transactions come before any exchanges regarding the content at hand, and this usually happens when students need more linguistic work to access the content and gain control over the focus of the task.

Besides variations in how transactions pertaining to certain strands succeed one another, the actual anatomy of a transaction is also interesting to explore briefly. Many transactions present themselves as a focused cluster of exchanges which once initiated is attended to and then closed, to then allow the initiation of another transaction. Unsurprisingly, because of the conversational nature of the interaction in these units, more specifically the apparently disjointed manner in which people attend to one another's contributions in a free flowing conversation, especially the content-grounded strand in some CLUs looks like a string of segmented transactions. In the CLU below, the content focused transactions can be summarised as follows: TR 1(A+B), TR 2(A+B), TR 3(instructional episode), TR 4(A+B), TR 5(A+B), and TR 6.

Annex 1A Lines & Ss		ANALYTIC STRAND / Transactions / Exchanges/Move functions *non-verbal contributions xxxxxx L1/L2 (almost or completely unintelligible talk)		
		The content-related work/argumentation	**The language-oriented work**	**The management of the learning process**
1	Tur	TRANSACTION 1 A(dinosaur) *Suggested answer proposal (sequencing of the pictures)		Initiation of CLU
2	Mar	*Implied disapproval Expressed disapproval re Tur's suggested answer		
3	Tur	Maintains his initial proposal		
4	Mar	Further challenges Tur's proposal Proposes alternative answer		
5	Eli	*Brief consideration of Mar's proposal		
6	Mar	*Further engagement with his own alternative answer proposal		
7	Mar	Non-verbal indication of sustained rejection towards Tur's initial answer proposal		
8	Eli	Adopts Mar's alternative answer proposal Provides justification		Dyad is formed Eli + Mar
9	Tur	Accepts alternative answer TRANSACTION 2A(monkey vs. mammoth and sabre tiger) Proposes answer ('monkey')		Initiates new transaction (signals continuation of the CLU)
10	Mar	Mild disagreement Alternative answer proposal ('mammoth')		
11	Eli	Adopts Mar's alternative answer proposal		
12	Tur	Accepts alternative answer Makes a point re the connection between his chosen pictures		
13	Mar	Agrees with Tur's observation (the point made re the sequencing of the Neanderthal man and the Homo Sapiens) Maintains his alternative answer and completes it ('mammoth and sabre tiger')		Attends to Tur's observation Maintains control over the course of their activity (sequencing of the pictures)
14	Eli	Adopts Mrc's alternative proposal		
15	Tur	Agrees with Mrc's alternative answer		Organises group activity(handling of glue and pictures –nearly 'bosses them around') Intonation and tone of voice in L1 (underlying annoyance at losing the argument)
16	Mar	TRANSACTION 1 B(dinosaur) *Seals agreed alternative answer from TR 1 (non-verbally)		
17	Tur			Assumes (controlling) leadership over the course of peer's actions
18	Mar			Compliance with Tur's assumed role
19	Eli			Compliance with Tur's assumed role
20	Eli	TRANSACTION 2B (mammoth and sabre tiger)		*Prompts peer to move on with the activity

21	Tur	Reiteration of agreed answer from move 12		
22	Eli	*Initiates enforcement of the first part of agreed answer from TR 2A		
23	Res	TRANSACTION 3		INSTRUCTIONAL EPISODE
24	Mar	A quick comprehension check re the understanding of task on the part of the Res without significant consequences on the group's course of action		
25	Res			
26	Ss			
27	Eli	TRANSACTION 4A (Ice Age 3 picture) *Completes enforcement of the first part of agreed answer from TR 2A		
28	Mar	Reiteration of proposed answer from move 10/TR 2A		
29	Tur	Attempts alternative proposal		
30	Eli	Xxxxxxx L1		
31	Tur	Firm challenge brought to picture sequence agreed on earlier in line 15/TR 2A Searches for relevant picture to support his proposal		Leaves group ain search for a picture of Ice Age 3 in the materials of a different group
32	Mar	Enforces the second part of agreed answer from TR 2A		
33	Eli	Expresses agreement with Mar's move 32		Supports Mar's choice (dyad)
34	Tur	Presents evidence (picture of Ice Age 3) in support of his suggestion from line 31		Rejoins his group
35	Mar	Expresses firm disagreement		
36	Tur	Provides justification for his choice (2 reasons)		
37	Mar	Acknowledges before disagreeing Introduces alternative answer *provides specification		
38	Tur	Challenges Mar's alternative answer Provides justification for his proposal form line 36 (a 3rd reason)		
39	Eli	Challenges Tur's proposal		
40	Tur	Dismisses peer's challenges TRANSACTION 5A(digression re Ice Age film) Digresses on the theme of Ice Age –the film	Very poetic use of L1 'vremurile apuse' metaphor (sun sets	
41' 41''	Mar	Agrees with Tur's observations about characters in Ice Age('yeah alright') TRANSACTION 4B (Ice Age 3 film associated with the present)		Encourages peer to maintain

		Maintains his proposal from line 37 Provides reason		pace and stay on track (Slight annoyance from tone of voice)
42	Tur	TRANSACTION 5B(digression re Ice Age film) Identifies the picture of the film Ice Age as the 3rd in the sequel		
43	Eli	Disagrees with Tur's observation		
44	Mar	Takes interest in the debate		
45	Tur	Provides justification for his observation launched in line 45		
46	Mar	Agrees with Tur		
47	Eli	Reconsiders and agrees with Tur		
48	Tur	TRANSACTION 6 (Neanderthal Man and Homo Sapiens) Redirects his attention to the two pictures which were his initial choice (lines 1 &12)		
49	Mar	Agrees with Tur's choices Specifies condition for agreement ('here')		Encourages Tur to finalise his proposal and maintain pace in the activity
50	Tur	Asks for clarification		
51	Mar	States the exact sequence		Provides explicit instructions
52	Tur	Agrees with Mar's specification from line 51		
53	Tur	Complies and executes		Direct suggestion that Eli becomes more involved in handling the materials (pictures and glue) L1- slightly bossy tone of voice
54				Complies and provides (glue) Closes the transaction Provides brief evaluation of the progression of their activity

[CLU 1A: lines 1-54 on in Annex]

Such CLU structure is an indication of the way in which students direct and focus their attention. Students appear to survey available information, engage with certain items briefly, move on to different items but then the tendency is to revisit and finalise exchanges initiated earlier in the conversation. Similarly, students appear to switch attention between content and linguistic features as many moves of double function suggest.

In what follows, I shall focus on strand representation within CLUs and possible explanations for the predominance of one strand in relation to how the other strands are represented. The analysis here reveals CLUS of balanced representation in terms of the three strands, but alongside these there are also CLUs that display relatively weak content and/or linguistic and/or management strands.

VI.2.2.1.1 CLUs with a less prominent content strand

One pattern relates to minimal engagement with the content which appears to combine with a shift of focus on basic language related work and managerial moves. The task around which this CLU is generated is to work out why the druids did not write their teachings down; the expected answers are memorisation highly regarded and also for keeping information safe. The learning interaction streams predominantly in L1 with some non-verbal contributions and little L2.

Annex 1K **LINES & Ss**		**ANALYTIC STRAND / Transactions / Exchanges/Move functions** *non-verbal contributions xxxxxx L1/L2 (almost or completely unintelligible talk)		
		The content-related work/argumentation	**The language-oriented work**	**The management of the learning process**
218	Ioa			TRANSACTION 1(organising group activity) Initiates CLU Allocates turn to Sma
219	Rux			Agrees with allocated turn to Sma
220	Sma			Polite double-check re her turn
221	Ioa			Confirms agreement re allocation of turn
222	Sma	Engages with question	Reads out question	
223	Ioa			Requests further clarification re arrangement of items on storyboard
224	Rux			Provides support to Ioa
225	Ioa		TRANSACTION 2(key words search) Engages in key word search in question Identifies key words 'teachings' & 'we'	
226	Rux	Engages with text on the storyboard	Repeats/echoes key word 'we' Reads out the text	
227	Ioa		Insists on searching for key word 'teachings'	Directs peers actions (encourages the search for key words) Follows the text in the question/coordination of materials
228	Rux		Proposes searching for key word 'they'	Follows the text on the storyboard/ coordination of materials
229	Ioa		Proposes searching for key word 'never'	
230	Rux	Resumes engagement with text on the storyboard	Repeats/echoes 'never'	

231	Ioa		Insists on searching for key word 'never'	
232	Sma		Proposes searching for key word 'Celts'	
233	Ioa		Insists on searching for key word 'never'	Persuasive move on peers to undertake a thorough search through the text
234	Sma		Reads out from text Identifies key word 'never'	complies
235	Ioa		Briefly reads out from question Selects another key word 'did'	Persuasive move on Rux to search for the word 'did'
236	Rux		Repeats/echoes 'did' Proposes new key word 'read' Asks Ioa's opinion re relevance of identified key word	Complies as she starts scanning the text again Consults peer
237	Ioa		Rejects Rux's key word 'read' as being of significance	
238	Rux		Identifies in text key word 'did' as suggested by Ioa in move 235	
239	Ioa		Expresses approval re 'did' as an indication of the matching between the text on the story board and the Q on the question sheet	Brings closure to this CLU Announces teacher of end of completion of overall task

[CLU 1K: lines 218-240/Q18 in Annex)

The above example clearly shows tentative engagement with the actual task which expects students to look at the text and use their own reasoning power to propose alternative answers regarding the druids' avoidance to write down their teachings. The way to appreciate the presence of the content-oriented stand is not merely by looking at the number of moves; rather a consideration of the substance of these moves is needed. For example, although there are a few moves under the content stand 'engages with task/text' it become obvious throughout the CLU that this engagement remains superficial in terms of dealing with the conceptual side of the text and addressing the task.

This CLU pattern seems to emerge when tasks are not exactly well pitched (i.e. well above the students' target language ability), and therefore students appear to spend disproportionately more energy on accessing this L2 mediated learning space to the detriment of engaging with the content. More precisely, when the content is accessed with difficulty students appear to

concentrate on basic bottom-up deciphering and allocation of turns thus the basic linguistic work and management of the activity take over to the detriment of the engagement with the content. In such situations the management strand is subsumed to the language-oriented stand in that managerial moves belong to language-focused transactions.

The debate here would be around the learning value of such CLUs. As foreshadowed earlier in this thesis, possibly content teachers would find such learning interactions as significantly slowing down or even impeding the actual dealing with the content in terms of deep learning. This would not be entirely unjustified as at the end of this CLU the students are merely left with a collection of key words based on a rather simplistic matching approach between elements from the question and the sequence on the storyboard. Nevertheless, if this CLU is regarded in the broader frame of all the CLUs generated by this group then one can see they do manage to go beyond this language/form based approach (bottom up processing) which in itself has its own value. Then if this is looked at in the even broader context of a whole lesson where once students finish their independent group work, they get a chance to revisit their work in teacher-led follow-up type of activities, it becomes evident how this kind of learning exercise, if basic linguistic decoding, is complemented by perspectives from others.

VI.2.2.1.2 CLUs with a less prominent linguistic strand

By a weak linguistic strand, I understand very little or no work on language be it L2 or L1. Less represented linguistic strands usually combine with well sustained content strands, thus typically, such CLUs would be made up mostly of content–driven transactions in which only some of the moves would represent managerial functions and very few language focused contributions. The task around which this CLU is generated is to decide on a sequence of pictures for the middle range of a time arrow. The learning interaction occurs exclusively through L1 with some non-verbal contributions.

Annex 1B LINES & Ss		ANALYTIC STRAND / Transactions / Exchanges/Move functions *non-verbal contributions xxxxxx L1/L2 (almost or completely unintelligible talk)		
		The content-related work/argumentation	**The language-oriented work**	**The management of the learning process**
1	Mar	TRANSACTION 1 (Cuza- 1850s Romanian Prince vs Egyptians) *Tentative answer proposal (Cuza)		Signals intention to contribute
2	Eli	Challenges Mar's suggestion Provides some justification Proposes a more comprehensive chronological sequencing	Persuasive use of 'listen'	Attempts to draw Mar into a discussion re the sequencing of the pictures
3	Mar	*Holds on to his initial proposal without providing any justification		Ignores peers
4	Eli	Challenges Mar Maintains her answer proposal	Persuasive use of 'listen'	Attempts to draw Mar into a discussion re the sequencing of the pictures
5	Tur	Agrees with Eli		Dyad formed (Eli+Tur)
6	Eli	Reinforces the dyad's agreed answer		
7	Mar	*Gives in to persuasion from peers		
8	Tur	Reinforces the dyad's agreed answer		
9	Mar	*Accepts peers alternative answer		
10	Tur	Digression/general knowledge challenge ('did you know...')	3 attempts in L1 to pinpoint the phrase 'in antiquity'	Reassures Mar he's made the right choice to follow the dyad's answer Considers spatial organisation of pictures on the time arrow
11	Eli	TRANSACTION 2 (Celtic hut) Suggests sequence		
12	Tur	Strongly disagrees with Eli's suggestion without providing explanation		
13	Mrc	Holds on to his initial chosen picture(Cuza)		
14	Tur	*disagrees with Mar's sequencing Provides revised sequencing (Egyptians, Celtic Hut, Cuza) without supporting explanations		
15	Mar			Makes a judgement driven by concern re the use of materials as opposed to content/challenges method
16	Tur	Maintains his revised sequence		Insists to go by content as opposed to number of pictures and how to fit them all in Reassures Mar pictures can be spatially arranged to fit on the arrow and in the right chronological order
17	Mar	TRANSACTION 3 (crusaders) Proposes next picture in the sequence		

		without any justification		
18	Tur	Agrees with Mar's proposal		
19	Eli	TRANSACTION 4 (Hiroshima bomb) Proposes next picture in the sequence		
20	Tur	Disagrees with Eli's interpretation of the phenomenon/event depicted in the image Proposes alternative interpretation ('explosion')		
21	Eli	Tentative attempt to justify her interpretation ('earthquake') Acknowledges the ambiguity of the picture		
22	Tur	Provides support for his interpretation (tentative hypothesis)		
23	Eli	Insists on the ambiguity element and the difficulty to speculate		

[CLU 1B: lines 1-23 in Annex]

As can be seen from the above example, the language strand is the least represented here, and any linguistic functions that moves may develop are subsumed to the content-grounded transactions. Similarly the management-of-learning strand, if better represented, serves the purpose of enhancing cohesion of the content-focused engagement. There is little focus on explicit work on language; nonetheless, there are a few more implicit elements regarding the use of language. The use of higher pitch in intonation in L1 is applied twice in moves 2 and 4 by the same student to convey persuasiveness which shows an awareness of the functions of emphasis and modulated intonation. Then, the repeated attempts in move 10 to pinpoint an academic sounding phrase 'in antiquity' can also be classed as underlying awareness of register in L1.

Given the fact that the above CLU is generated in the medium of the mother tongue, there may be a temptation to associate little explicit linguistic engagement with the use of L1 in CLIL interaction. This however would be simplistic. L1 does host a more automatic engagement with language in that the tendency is to use the language rather than reflect what certain structures and functions do for communication. In this respect the linguistic work is of a more implicit nature but the involvement of L1 does not mean to say that it does not prompt opportunities for linguistic expansion. Moreover, besides the more implicit linguistic work, there are also some instances when L1 interaction prompts explicit linguistic debates regarding style, register, synonymy all of which is going to be detailed in a subsequent section. When L2 is also used alongside L1, a great deal more explicit language related work emerges, and consequently better represented language strands develop. What is interesting to note here is not that L2 has potential to nurture

metalinguistic awareness and L1 has less potential to do so. Rather, it is interesting to see what type of linguistic work each has potential to prompt when L1 and L2 are used in conjunction, and how they complement each other in terms of nurturing linguistically competent students.

Another more obvious cause for the minimal (or lack of) representation of the linguistic strands is the employment of non-verbal interaction, i.e. when CLUs are largely sustained through non-verbal exchanges. It has to be said that such CLUs are not frequent in the data set analysed here but some of the features they display are worthwhile exploring. The example provided below, shows students engaging in a learning interaction of a predominantly non-verbal nature with some L2 and little L1 use. The task around which this CLU is generated is to select relevant pictures for the past end of the time arrow and arrange them in a chronological sequence. At this stage the students have already arranged at the end of the arrow representing the distant past (dinosaur, Neanderthal man and Homo sapiens).

Annex 1E **LINES & Ss**		**ANALYTIC STRAND / Transactions / Exchanges/Move functions** *non-verbal contributions xxxxxx L1/L2 (almost or completely unintelligible talk)		
		The content-related work/argumentation	**The language-oriented work**	**The management of the learning process**
1	Cos	TRANSACTION 1 (elimination of unlikely pictures for the past end of the arrow) *inspects picture representing a contemporary athlete		
2	Tud	*points to a picture representing a jet		
3	Kty	Identifies Tud's picture as current		Follows Tud's lead
4	Tud	*Agrees with Kty's observation		
5	Di	Agrees with Kty 's observation Identifies a picture of the film Ice Age as current		
6	Kty	Agrees with Di's observation		
7	all	*quiet inspection of Ice Age 3 picture		
8	Kty	Restates Di's observation		
9	Cos	Echoes Kty's contribution		
10	Di	Reinforces observation made in move 5		
11	Kty	*silent inspection of materials		
12	Di	*silent inspection of materials *Selects a picture Undecided observation re the chronological relevance of the picture	Basic L2 clearly restrictive here 'no?' meaning 'What do you think?'	Asks for peer's opinion
13	Kty	Ambiguous reply re Di's observation		

14	Tud	*firm evaluation of the chronological relevance of the picture selected in move 12 by Di		
15	Kty	TRANSACTION 2(Ancient Greece) Elects a new picture and places it on the time line without any justification		
16	Di	TRANSACTION 3 (Ancient coin) Elects another picture		Asks peer's opinion
17	Tud	Evaluates Di's choice silently without offering any comments		Shows interest in Di's choice
18	Di	Places her picture on the time line		Interprets silence as acceptance
19	Cos	TRANSACTION 4 (Ancient Egypt) *Elects another picture		*asks for peers' approval
20	Kty	Tentative and illegible interpretation of the picture		Offers help
21	Cos	Appears to disagree with Kty's comment		
22		Instructional episode		
23				
24				
25	all	TRANSACTION 5 (mammoth) *silent inspection of materials as a result of Teacher intervention		
26	Tud	*suggests position for 'mammoth' right at the beginning of the time line after 'dinosaur'		Tunes into T's suggestion(who advises Ss to consider the 'mammoth' but does not indicate its precise position)
27	Di	Agrees with Tud's suggestion		
28	Tud			Assigns mini-task to peer
29	Di	Provides further explanation re Tud's suggestion from line 27		Supports peer's understanding and actions (Kty's)
30	Kty	Indirectly requests further clarification re positioning of the picture in the chronological sequence		*gives an indication of being slightly confused
31	Di	Provides justification for the answer from line 27		
32	Kty	Explicit request for guidance re rearrangement of pictures to make room for the' mammoth' on the time line	Limited L2 'where is it' instead of 'where should it go?'	*Indicates difficulty in following the peer's explanations *conforms with peers suggestion (of squeezing in the mammoth right at the beginning of the arrow)
33	Tud	*Indicates exact position on the time line		
34	Di	Agrees with Tud's answer		
35	Tud	Restates his answer from line 33	Use of intonation	Reassures Kty about the adequacy of their answer
36	Di	Verbalises and further elaborates on Tur's answer from line 35		Provides clarification for peer (Kty)
37	Kty	Agrees with the suggested sequence detailed by Di in line 36		Conforms with peers' suggestion
38	Di			*Supports peer's actions

				in handling the materials
39	Kty	Completes the agreed sequence by sticking the Homo sapiens after the Neanderthal man		
40	Tur	Slightly xxxxxxxx L1 /appears to be further clarifications re the chosen sequence		Supports peer's understanding

[CLU 1E: lines 1-40 in Annex]

The teacher's occasional insistence that the activities should be conducted only through the target language combined with students' tendency to comply and the restrictive nature of limited L2 leads to the above illustrated type of interaction whereby communicationally insufficient utterances are complemented with gestures, facial expressions, and movements of materials in order to convey full meaning. The result of this is obviously a dialogically weak strand but a communicatively strong interaction overall, if one looks at the cohesion students manage to maintain throughout the content-related strand.

The first observation that I would make here regards the emergence of dialogically undeveloped transactional units. While the existence of a transaction in the absence of dialogue or with minimal verbalisation may appear unlikely, if a strong interactive strand is assumed during analysis, one may notice that there can be learning exchanges sustained through non-verbal contribution (gestures, reference to materials and reliance on shared understandings all of which need to be taken into consideration). For example, in CLU 1E (1-40), Transaction 2 is not technically a transaction, at least not from a dialogic perspective, as this consists of just one individual's contribution (move 15). However, under a more interactive-oriented type of analysis this could be classed as a learning transaction, if dialogically undeveloped, because Kty brings her answer proposal to the attention of the group who silently and briefly consider her answer without rejecting it. In move 18 Di places a picture of an ancient coin after the picture of Ancient Greece placed by Kty confirming that the proposal was tacitly accepted. Thus, there is, if more implicitly, a certain level of learning interaction around Kty's contribution in move 15.

Another example is transaction 4 in CLU 1F (moves 1-43 in Annex) where the exchange 29-30 shows a brief disagreement regarding the sequencing of a couple of pictures previously arranged on the time line by other peers. Considering that Lor and Mar engage with these pictures for the first time in

this CLU, this brief exchange could not class as the continuation of an earlier transaction. In addition, because a clear communicative function is performed here, more exactly disagreement followed by agreement applied on content (i.e. chronological placement of pictures on the timeline), this could be classed from an interactional perspective as a non-verbal learning transaction.

29	Lor	TRANSACTION 4 (re-arrangement of the sequencing of a couple of pictures) *Brief disagreement re pictures earlier arranged by other peers *Disagreement resolved through gesturing and signs		
30	Mar	*Brief disagreement re pictures earlier arranged by other peers *Disagreement resolved through gesturing and signs		

Similarly, one can also notice dialogically underdeveloped transactions but which maintain their coherence content wise. For instance, in CLU 1E (1-40), the first transaction is articulated around eliminating pictures which do not belong to the category of past events. All verbal exchanges in this transaction are conducted through a basic L2 which students obviously find insufficient to get their messages across, and therefore they resort to non-verbal contributions to compensate. Out of 14 moves only half contain verbalised contributions and even these are complemented by non-verbal additions. Even so, an inspection taken beyond those verbalised contributions shows students briefly evaluating each other's choices, and overall, this transaction contributes to the progression of the content related work in this CLU.

The points I would like to reiterate here regard the multimodality of CLIL learning interaction which is becoming very evident whilst investigating these weak language stands. Further, another observation of an analytic nature; more precisely, in investigating CLIL learning, a strong interactive perspective rather than a purely dialogic one is needed in order to do justice to the notion of learning transaction because alongside the dialogically fully fledged transactions the dialogically un- and under-developed transactions seem to also make a contribution in the overall learning process.

VI.2.2.1.3 CLUs with a less prominent management-of-learning strand

There are no CLUs without any management directed work, i.e. moves to serve a managerial function. There are however, if not entire CLUs, transactions where there is minimal or no attendance to the management of

the learning. In the example below, the task around which this CLU is generated is to identify elements from a list in a picture of a wealthy Chinese household. The list students have contains a mix of elements from types of homes they studied as part of CLIL History module. The learning interaction comprises a fairly balanced use of L1 and L2, and some non-verbal contributions.

Annex 1Q **LINES & Ss**		**ANALYTIC STRAND / Transactions / Exchanges/Move functions** *non-verbal contributions xxxxxx L1/L2 (almost or completely unintelligible talk)		
		The content-related work/argumentation	**The language-oriented work**	**The management of the learning process**
29	**Kty**	TRANSACTION 1 (selection of items likely to be part of a wealthy household)		Initiates CLU Invites peers to contribute
30	**Ili**	Selects item ('watch tower', 'swimming pool')		
31	***Kty***	Engages with text	Repeats/echoes Ili's answer	
32	***Ili***	Restates item proposed in move 30 ('watch tower')	Translated question in L1 to peers	Organises her own learning actions 'let's see'
33	**Kty**	Restates item proposed in move 30 ('swimming pool')		
34	**Ili**	Agrees Proposes additional item ('living quarters')		
35	**Kty**		Repeats/echoes Ili's answer	
36	**Mar**	TRANSACTION 2 (discussion/interpretation of a square shape in the middle of the court yard: swimming pool or garden) Poses challenge to peers re 'swimming pool'		
37	**Kty**	*indicates location in the picture where the item is depicted		
38	**Mar**	Maintains her challenge	Intonation (used to convey doubt)	
39	**Tra**	Supports Mar's challenge		
40	**Mar**	Maintains her challenge Provides justification		
41	**Ili**	Defends her answer provided (move 30) Provides 2 justifications		
42	**Kty**	Supports Mar' observation		
43	**Tra**	Supports Mar's observation Provides explanation Makes inference		

[1Q: lines 29-43/Q3 in Annex]

The focus in transaction 1 rests on engaging with the content (selection of items likely to belong to a wealthy Chinese household) while transaction 2 hosts a dynamic discussion around the interpretation of a black and white slightly fuzzy picture. Some group members identify this as a 'swimming pool' and others support the theory of it being a garden/courtyard, given the context of an ancient Chinese household. Particularly, in the second transaction where the argumentative engagement intensifies the students seem to abandon the explicit organisation of materials/group or allocation of turns as launching into a debate naturally annuls the explicitly negotiated turn taking. Another similar example, still at transactional level, is presented below.

19	Eli	TRANSACTION 4 (Hiroshima bomb) Proposes next picture in the sequence		
20	Tur	Disagrees with Eli's interpretation of the phenomenon/event depicted in the image Proposes alternative interpretation ('explosion')		
21	Eli	Tentative attempt to justify her interpretation ('earthquake') Acknowledges the ambiguity of the picture		
22	Tur	Provides support for his interpretation (tentative hypothesis)		
23	Eli	Insists on the ambiguity element and the difficulty to speculate		

[CLU 1B: lines 1-23 in Annex]

As with the above presented examples, many other instances seem to indicate that students temporarily abandon what at times proves to be excessive management of the learning(e.g. religious allocation of turns), when discussion opportunities arise.

VI.2.2.1.4 CLUs of balanced representation - strand fusion

As hinted earlier in this thesis, the fluid nature of discourse makes it difficult to undertake an analysis organised in neat categories. Overall, it is possible to distinguish between linguistically-oriented functions moves and their content-oriented or process-oriented functions. However, at time s especially with the language and content strand it is difficult to assign transactions to one strand or the other. In the following example, the task around which this CLU is generated is to work out why the druids did not write their teachings down (expected answer: memorisation highly regarded/keeping information safe). The learning interaction is carried out solely through L2.

Annex 1L LINES & Ss		ANALYTIC STRAND / Transactions / Exchanges/Move functions *non-verbal contributions xxxxxx L1/L2 (almost or completely unintelligible talk)		
		The content-related work/argumentation	**The language-oriented work**	**The management of the learning process**
312	Mar	TRANSACTION 1 (implicit engagement with propositional side of text) Engages with question	TRANSACTION 1 (text-comprehension based approach)//accessing Reads out	TRANSACTION 1 (cooperative approach to accessing text) Initiates CLU
313	Mir	Engages with text	Reads out	
314	Mar	Engages with text	Reads out	Takes over reading the text from Mir
315	Tud		Provides support with the pronunciation of the word 'knowledge'	
316	Mar	Engages with text	Reads out	
317	Mir	Engages with text	Reads out	Takes over reading the text from Mar
318	Mar	Engages with text	Reads alongside Mir (317)	Joins Mir in reading aloud
319	Mir	Engages with text	Reads out	
320	Mar	Engages with text	Reads alongside Mir (319)	Supportive move
321	Mir	Engages with text		
322	Mar	TRANSACTION 2 (answer proposal)	Provides linguistic frame for expression of answer	Implicit invite to peers to contribute
323	Tud	Provides answer Selects key fragment from text	Reads out	
324	Mir	Expresses agreement with Tud's proposed answer		
325	Mar			Signals closure

[CLU 1L: lines 312-325/Q18 in Annex]

There are a series of moves in transaction 1 which clearly serve a double if not triple purpose: for example move 312 reveals some engagement with the content at hand, linguistic attendance through reading out the text and also initiation of this a particular CLU. Looking vertically at transaction 1 and then across the three strands it becomes obvious why it is problematic to attribute this transaction only to one of the three strands. There is clear engagement with the propositional side of it but only implicit cognitive involvement. The language oriented work (reading aloud) may not be a sign of stronger engagement but it is more visible and the work appears to revolve around form at word and phrase level. Finally the management strand displays moves that are an indication of a cooperative type of interaction. However, it would be wrong to regard these as separate threads running through a transaction as they fuse together in the way in which they support one another. For

example, looking from left to right, perhaps one could say that the management-of-the learning strand is primarily subsumed to the language-oriented strand as the managerial function of the moves give the cohesion of the language work. In its turn the language-strand can be regarded as sub-summed to the content-grounded strand because it represents that decoding work necessary to engage with the content adequately (basic comprehension work as a pre-requisite to start focusing on content and task). Then one needs to start looking vertically towards transaction 2 where an answer proposal is offered for the task which is a confirmation of the fact that transaction 1 with all the functions activated across the strands is a cumulative preparation for the articulation of a solution to the task.

Another example provided below shows a similar scenario as the one described above in terms of strand fusion only that the sequence of the transactions is the other way round. In the previous example there is a progression from gaining gradual control and maintaining cohesion throughout the textual comprehension work which then feeds into a higher level engagement displayed in transaction 2. This CLU starts with an answer proposal, which is then broken down for peers in transaction 2

The task around which this CLU is generated is to work out why accepting a skull from a Celtic warrior is a good idea in the broader context of the Celtic culture (expected answer – cult of the head/sign of power/talisman for their journey through the enchanted forest). The learning interaction is carried out predominantly through L2 with little L1 use.

Annex 1M **LINES & Ss**		**ANALYTIC STRAND / Transactions / Exchanges/Move functions** *non-verbal contributions xxxxxx L1/L2 (almost or completely unintelligible talk)		
		The content-related work/argumentation	**The language-oriented work**	**The management of the learning process**
108	Di	TRANSACTION 1 (answer proposal)		Initiates CLU
109	Ili			Locates relevant text/pcture on storyboard
110	Di			Allocated turn to Dani
111	Dani	Engages with question Engages with text	Reads out Reads out	
112	Ili			Focuses the group's attention on question
113	Di	Engages with question	Reads out	Follows Ili's lead
114	Dani	Provides answer	Points out in text relevant phrase 'brings luck'	Directs peers' attention
115	Ili	Rounds-off Di's answer		

		proposal		
116	Di	Expresses agreement TRANSACTION 2 (basic exploration of elements from text/picture)		Initiates examination of main element form corresponding picture on the storyboard 'skull' Implicit invitation to peers to contribute
117	Dani	Provides elaboration (definition/description)		
118	Ili			Initiates examination of another element
119	Dani		Provides linguistic support with the word 'warrior'	
120	Ili	Selects part of the text Relevant to their agreed answer	Reads out	
121	Dani		Provides linguistic support with the word 'enemies'	
122	Ili	Selects relevant phrase from text for their answer	Reads out	
123	Di	Expresses agreement		Brings closure Initiates another CLU
124	Dani			Agrees to move on

[CLU 1M: lines 108-124/Q9 in Annex]

This illustrates scenarios when one student is acknowledged by the group as more able in which situation the tendency is for the assigned expert to come up with a solution which is then discussed or explained to peers as well as linguistically mapped (key words, textual clues pointed out). It is interesting to see that in this latter example, unlike in the previous one, the starting point is the content-grounded strand, and because of the need to explain the answer proposal to peers, particularly Dani's moves develop from serving primarily a propositional function at the beginning of transaction 1 to bearing linguistic and managerial functions (see move 114).

***

The micro-analysis in section on structure and strand representation highlights the different functions that a move (or parts of it) can play simultaneously across these strands, which shows how tightly interrelated are these three strands. Thus the way in which the strands are represented should be regarded as an indication of how students shift their focus between content, language and task management. These patterns can inform us with regards to the shape this interaction takes and how learning focus is

distributed during learning under the CLIL approach. I would argue that the dual focused (content and language) learning usually invoked when one talks about learning in the medium of a foreign language takes the shape of learning interaction of three foci here, if one is more prominent at any one time.

Another observation would be that strand representation should not to be regarded as a direct measure of the learning value of any CLU. Most CLUs display interplay of stronger represented and lesser represented strands and as pointed out above the emergence of lesser represented strands is not necessarily an indication of little learning value in a conversational unit.

VI.2.2.2 Patterns in the content-grounded strand

In the previous section the analytic angle is on distribution of functions at move level, sequentiality of transactions and strand interplay at CLU level. Here the focus is on specific patterns within each strand purely in terms of student cognitive engagement.

Patterns identified at CLU level under this strand are determined mainly according to how an answer proposal is treated in terms of being challenged and discussed, i.e. from little engagement with peers' contributions to tentative challenges and emergent argumentation. Thus, I have identified the following main patterns of argumentative engagement: minimal, tentative and sustained. In order to be able to undertake an in-depth analysis as well as address coverage, most of the examples are provided at transactional level (i.e. shorter extracts) as most of the conversational units are large units. The selected transactions are however representative for the conversational units from which they derive and can be seen in the broader context of the CLU through juxtaposing the analysis below with the scripts available in the attached annexes.

VI.2.2.2.1 Minimal content-related argumentation

Minimal content-related argumentation refers to those instances when answer proposals are accepted with very little or no negotiation or discussion.

One common scenario is when one student takes or is granted expert status with the other members assuming more passive roles. The tendency is for the

expert answer proposal to be accepted by the group without any challenging. This combined with less thought provoking tasks/ or straight forward comprehension questions can result in minimal, if any, argumentative interaction (see 'fill in the gaps' activity in annex 1G where Tud provides most of the 14 missing content-related items/words without any challenge from peers. Of necessity, only transactions are offered here for exemplification but most of the other transaction in this CLU flow in a similar fashion, and therefore it can be inferred that this conversational unit lacks overall argumentative value.

4	Di	**Di:** The history of the ^^^	TRANSACTION 1 (expected answer: Celts) Initiates engagement with text
5	Tud	**Tud:** *[points to word in the box]:* Celts ^^^ look it's up here	Proposes answer
6	Di	**Di:** [waiting for final approval from the two boys]: Celts? [*to Tudor*]: sure?	Expresses uncertainty re Tud's answer proposal
7	Tud	**Tud:** [*inspects the text again*]: The history of the Celts ^^^ yes positive	Firm restatement of his answer proposal from line 5 with no justification provided
8	Di	**Di:** *[whispering something to Tud*] :xxx	Xxxxxxxxx L1
9	Teo	**Teo:** of the Celts that's fine	Brief consideration of Tud's answer proposal Expresses agreement
10	Di	**Di** *[fills in with the first gap with the word 'Celts']*	
11	Teo	**Teo** *[inspects the supplementary topic related vocabulary sheet]*	*brief engagement with materials

[CLU 1G: lines 4-11/ Transaction 1 in Annex]

Overreliance on experts and lack of confidence on the part of other peers may lead not only to a lack of argumentative engagement but also to one-sided or even erroneous answers. In the example below, although Teo holds the correct explanation regarding the calculation of years across BC and AD, because Tud is considered the brainier one the competing answers are not discussed at all, the right answer loses out and the expert's answer proposal is sealed /validates in move 18 on grounds of the credibility of the expert. The roles students hold in a group can be seen also in the way in which they use language to persuade (move 15 expert statement 'it has to ...' and the hedging in move 16 ' I thought...' shows the voice of one who does not claim to hold 'the' answer).

12	Di	begins between ^^^*[Indirect persuasion/almost an expectations that the other students contribute – Maintains her role as a group 'secretary']*	TRANSACTION 2 (expected answer: 750BC-600BC) Initiates engagement with text
13	Tud	600BC	Provides answer
14	Teo	no it's 750BC	Challenges Tud's answer proposal
15	Tud	It has to start from the smallest number and goes up	Provides justification
16	Teo	I thought it had to start from the biggest number and goes down when it's BC	Challenges Tud's justification Provides explanation for his own answer proposal
17	Tud	and 750 *[helping Di to write down*]	Maintains his answer without engaging with the competing alternative
18	Di	***[Di** writes down the answer as maintained by Tud]*	

[CLU 1G: lines 12-18/ Transaction 2 in Annex]

Another scenario under which CLUs of minimal argumentative value are generated is when students are significantly restricted on verbalisation (i.e. when avoidance of L1 is recommended in the absence of a reasonably developed functional command of L2). I have illustrated earlier that some non-verbal exchanges may contain implicit evaluations and therefore reveal a type of learning engagement that is not utterly void of learning value. Nonetheless, a restriction placed on the medium through which students are comfortable to articulate their thinking aloud for themselves and peers would deprive students from the benefits of dialogic interaction which can lead to articulation of sophisticated thinking. The obvious point here is that while non-verbal contributions have value and are integral part of a multimodal type of learning, dialogic learning should stay at the forefront. In other words, it is not that students do not engage in complex thinking when they do it quietly and express it through pointing to some pictures thus making connections and showing engagement with propositional knowledge. The problem is that a lack of verbalisation of these thoughts/ideas can hinder their advancement.

The example provided below (Transaction 3/CLU 1F), reveals one such learning interaction heavily driven by non-verbal communication. The task around which this CLU is generated is to chronologically sequence a set of pictures. Having arranged the past end and the top end of the time arrow, in this particular CLU the students appear to aim to select relevant pictures for the middle range of the arrow. There is little and basic use of L2 and even less use of L1. Although there are little and basic dialogic exchanges, overall group cohesion and task focus are maintained; Dan keeps listening to peers' contributions and fills in the arrow with pictures also applying his own implicit

judgment. However, the lack of dialogic exchanges poses serious limitations on this learning interaction in terms of argumentation.

18	Teo	*[**Teo** picks up two pictures and drags them closer to him to inspect them]*	TRANSACTION 3 (negotiation of sequence) *Tentative choice of two pictures to go on the time tine
19	Mar	**Mar:** No Dan guys *[gesturing to both Teo and Dan to hold on as they carry on sorting out pictures on their own disconnected from the rest of the group --she appears to attempt to bring some cohesion into the group work]*	
20 20' 20'' 20'''	Lor	***[Lor** interferes with some of Teo's independent actions as he is trying to place some pictures on the present end of the arrow without running them by the other members of the group]* *[**Lor** suggests through hand movements that he should swap the order in which he's arranged the two pictures he ignores this suggestion]* *[**Lor** laughs somewhat embarrassed and holds her head in her hands implying he is giving her headaches and suggesting Teo is hopeless and clearly making a wrong choice because he wouldn't accept suggestions from peers]* ***Lor** [to Mar and Dan]:* xxxxxx is the picture^^^ this ^^^ this ^^^and that picture	*20' Suggests different sequence to Teo's choice *20" Insists Teo's arrangement of the two pictures in terms of sequencing is wrong 20''' agreement with Teo's choice of pictures Proposes alternative sequencing of the two pictures
21	Mar	**Mar** *[to Lor & Dan]:* No no no wait this this *[pushes a pictureforwards suggesting it as the right one to be arranged in their time line**]***	Disagrees with pictures proposed by Lor (based on Teo's choice) Proposes new picture without providing justification
22	Lor	**Lor:** Ok put here *[points on the time line where the picture needs to go]*	Accepts Mar's proposal
23	Dan	*[Dan is putting glue on it and stick it where Lor indicates]*	
24	Mar	**Mar** *[to Dan]:* xxxxxxxx	
25	Lor	**Lor [***pushesforwards one of the pictures identified in move 20''' and directs it towards Dan to put glue on]:* Put on glut ^^^ *[To Mar]* What's the English for glue?	*Reinforces her proposal from line 20'''
26	Dan	**Dan** *[accepts the picture and spreads glue on it]*	
27	Mar	**Mar:** xxxx	
28	Lor	**Lor:** ok	

[CLU 1F: lines 18-28/ Transaction 3 in Annex]

NOTE: Visual access to the pictures they handle is obscured by their movement most of the times, and therefore explicit reference to the items they are handling is not always possible here.

It becomes obvious by looking at the overall CLU that throughout transactions 1 to 4 many opportunities to further explain disagreement, or provide justifications for own choices are reduced to implicit suggestions in the form

of gestures. The basic use of L2 displayed in subsequent moves (31' – naming of items in pictures) confirms the fact that students make such extensive use of paralinguistic features to compensate for what they cannot verbalise. A similar example can be seen in move 34 where Lor makes use of L2 in an attempt to describe a fashion model/ elements of modernity that rules out the pictures from being placed at the past end of the arrow. She however resumes her justification to a simple definition ('this is not an ^^^ a past woman') but the observations based on which this is put forth are not provided. Further, Lor's contribution in line 20 illustrates the point made here best. She does manage to put her messages across and through her contribution the learning interaction progresses, but not at a level at which this could potentially develop. One can see there is potential for a more engaging and argumentative type of interaction from the way in which the students take sides and also (if the management-of the learning strand is taken into account) from how dyads form (boys v girls) but lack of verbalisation holds this potential back.

A further scenario is when answer proposals are put forth, if tentatively, but they remain in the form of unattended contributions either because managerial exchanges take over or when the overall conversation takes a more disputational orientation.

181	**Mir**	Question number thirteen	
182	**AnM**	*[reads out the question]* Can you think ^ can you think of two possible explanations why the body of Prince Liu was dressed up in Jade ^^ oh I thought it was my turn now	Engages with question
183	**Lor**	Luc didn't have a turn yet	
184	**AnM**	*[to Luc]* ok go on you read now	
185	**Luc**	*[hesistant]*	
186	**Dan**	Go on Luc get on with it *[impatiently]*	
187	**Luc**	Xxxxx Prince Liu was dressed up in Jade for his funeral Jade is a precious stone	Engages with text
188	**AnM**	*[to Lor]* are you under the impression Luc's reading is amazing	
189	**Dan**	*[reads the question again]* Can you think of two possible explanations why the body of Prince Liu was dressed up in Jade for his funeral ^ [*formulates answer in his own words*] Jade is a precious stone ^^ well Prince Liu was dressed in Jade because it was a precious it was a precious stone and aaaa ^^ is ^^^	Engages with question Proposes answer
190	**AnM**	Because body no good	Proposes alternative answer
191	**Ss**	*[laugh]*	Implicit dismissal of AnM's contribution

[Annex 1R: lines 181-191/ Q13 in Annex]

In this short CLU example, the underlying friction rising from the allocation of turns clearly diverts' students' focus from the actual task and content. There are two answer proposals which remain unattended as not even at a later stage throughout the students' activity are these answers revisited in any way. AnM insists that it is her turn to read on grounds of her 'better' reading abilities whereas the rest of the group feel that turns need to be allocated on fairness so everybody has a chance to participate. Dan makes a contribution which could have potentially initiated the nucleus of this CLU, i.e. a discussion of plausible explanations as to why a prince's body would be put into a jade burial suit after his death. AnM's contribution however is followed by peers' dismissive laugh because of the lack of grammatical accuracy in her utterance. Peers' reaction here needs to be seen in the context of move 188 where AnM challenges in a less pleasant way Luc's ability to read, and it also need to be traced back into the students' conversation from previous CLUs as this friction about who is more suitable to read out for the group grows as their activity progresses (see for example lines 34, 48, 52, 60, 66/68 all of which show AnM approaching peers regarding turns and reading ability in a rather confrontational manner). Thus, although there is potential in contributions 189 (jade precious stone fit for a prince's burial) and move 190 (body preservation) the underlying tension regarding who should be acknowledged as group expert takes over and impedes an in-depth exploration of the content.

In short, the above examples illustrate scenarios of minor argumentative engagement when exploration of task does not really take off and answer proposals, if provided, are not further explored due to a restriction of a certain nature.

VI.2.2.2.2 Tentative content-related argumentation

Tentative content-related argumentation refers to those situations in which answer proposals are initiated and some reaction indicative of engagement is evident. This engagement is usually expressed through considering an answer proposal and expressing agreement or by bringing an addition (extension) to the already proposed answer. This kind of argumentation can also include some direct challenges or alternative answer proposals. However, these challenges and/or alternative/competing answers, do not lead to fully fledged argumentative interaction.

Perhaps, I should start by acknowledging that poorly phrased questions and low level tasks appear to be the primary culprits for holding back the students' engagement. There are situations when the groups gel well, turn taking develops spontaneously and fairly, balance of L2, L1 and non-verbal contributions make any argumentation sustainable, nonetheless the argumentative discussion does not really take off primarily because the answer is too obvious (i.e. the question is mostly a comprehension-based one). In such instances very often immediate agreement is reached and no further elaborations are suggested. This is an extract from a CLU (the 8 moves at the beginning of this conversational unit are left out as they are not relevant for the content strand/argumentation).

273	**Mar**	yes ok ^^^ ^^^ Brigit can change Brigit can change into a swan Brigit was a mother goddess, patroness of arts and crafts poetry, traditional learning and farm animals. Shape^^^	Engages with text
274	**Mir**	*[provides support with pronunciation]*: **shapeshifting**	
275	**Mar**	was common among Celtic gods	Engages with text
276	**Mir**	was common among Celtic gods and goddesses who often	Engages with text
277	**Mar**	took the form of their favored animals. For example, gods could take the form of birds to bring good or bad messages to people.	Engages with text
278	**Mir**	The answer is ^^^ so who was allowed	Pinpoints the focus of the question
279	**Tud**	to change its form	Provides extension for question focus
280	**Mir**	yes to change its form	Agrees with identified focus
281	**Tud**	Gods	Provides answer
282	**Mar**	Gods	Echoes answer in agreement
283	**Mir**	yes Celtic gods	Agrees with answer and provides addition

[CLU 1L: lines 273-283/ Q14 in Annex]

The question 'Who were capable of shapeshifting according to Celtic belief?' facilitates the identification of a nearly ready-made answer from the text. There is clear engagement with the text on the part of all members of the group but little prompting from the provided task and materials for the generation of any discussion. One can see that only an exchange of 3 moves between three members of the group is necessary here to provide the answer. 'What' and 'who' questions may have a place in the broader picture of learning but since here stimulation of the higher order thinking is targeted, then perhaps the questions should have been phrased differently (e.g. 'In what way being able to shapeshift might have been useful for the Gods?')

Poorly phrased questions or the straight forward comprehension task are, to a large extent, responsible for the students' lack of argumentative engagement. Such lower-level tasks fuel a tendency in students to search for textual chunks as answers for tasks, which minimises the chances of any potential explorative talk. While this remains true, another cause appears to profile based on this data set. If one compares the reaction to the same question (a higher order level one) from two groups, one can see that, sometimes, even though the task is thought-provoking enough, deeply rooted habits (textual work) can take over. Thus, it may appear that also responsible, to some extent, are those 'skills' developed as a result of exam-driven drilling (these students as explained in the Context chapter are exposed to plenty of sessions focused on use of English and reading comprehension as part of their EFL/ Cambridge exam preparation). It is interesting to see that the Y4 students (see 1L: Q4, p. in annexes) are staying at a textual level because they follow the routine drill of identifying chunks which usually provide half of an answer. In contrast, the Y3 students launch in discussion more readily partly because the exam–oriented skills are not so strongly present in their learning habits (see *CLU 1J:Q7-139-150, p. in annexes).*

Other instances of tentative argumentation are those when competing answers arise but they are not defended through articulated argumentation. In the following example there are competing answers but low-level argumentation, i.e. relatively weak supporting reasons are provided which are not sufficiently explained or explored.

87	**Adw**	*[reads out the beginning of the Q and carries on reading to himself]* Compare the traditional and the modern pagodas ^^^ xxxxx	Q4 Engages with question
88	**Rux**	*[pointing at the picture]* This is an old temple ^^ this is a new temple	Identifies main elements of the content
89	**AG**	The children spend a lot of time in the temple	Proposes answer (1)
90	**Adw**	no they are not	Disagrees on answer (1)
91	**AG**	Yes , yes	Maintains his answer (1)
92	**Mrc**	Yes , yes	Supports AG's answer (1)
93	**AG**	That's their school	Provides extension to his answer (1+a/temple=school)
94	**Mrc**	^^ to prey ^ what's the English for this?	Provides elaboration to answer (1+a+b/temple=school=for praying)
95	**Res**	to prey	Instructional instance
96	**Mrc**	to prey ^ children stay in temple to prey ^^^ to prey	Restates answer 1 cumulatively elaborated (92,94,96/ temple for

			children to pray)
97	**AG**	Not only for that	Challenges extension proposed by Mrc (to pray)
98	**Mrc**	They so do mostly to prey	Maintains his position re extension (to pray)
99	**Rux**	*[in support for Mrc]* yes yes ^ look here *[quotes from the Q sheet]* children use them *[although the part of the Q she refers to reads 'people use them differently']*	Supports Mrc's answer extension (to pray) Provides justification (quotes from text)
100	**AG**	This pagoda is also a *[whispered to Mrc]* xxxxxxx	Appears to articulate challenge brought to Mrc's extension
101	**Mrc**	Yeah riiigt *[laughs]* xxxxxx	Dismisses AG's challenge

[CLU 1O: lines 87-101/Q 4 in Annex]

In the above CLU there is one answer proposal and a simple extension/elaboration is offered which is challenged but not in a confident enough way. Initially, the fact that pagodas are places similar to schools where children spend time is established. An extension to this is provided (purpose of the pagoda-like schools as prayer places) which is directly challenged (97). If one looks back at move 93 where AG insists that pagodas are schools and at his reaction in move 97 particularly in response to Mrc' suggestion 'to pray', it can be inferred that his challenge regards the fact that pagodas are not only temples for prayer but also schools for educating children. This is fairly timidly put across by contrast to Mrc's more verbal way of supporting his own version. There is evidence of good cumulative work towards the articulation of an answer (with Mrc maintaining a central role in this). The posed challenge is not sufficiently explained and therefore it does not generate a discussion with potential for strong argumentation.

In addition to the above described situations, it needs to be said that an interaction of learning value does not come only in the form of competing answers and challenges. It could be that the students genuinely agree and co-construct an answer in a collaborative manner. In such instances, one needs to be looking at the depth which students reach in terms of dealing with task/content. In the example provided below, students aim for the use of the target language but in a relaxed way with L1 interventions when needed, and the whole conversational unit develops in a collaborative mode.

169	**Alx**	*[starts reading the question out]* If you were a great Chinese Emperor and had to decide the building of the Great Chinese Wall, where in the country would you choose to build it and why	Q11 Engages with question
170	**Ili**	and why ^^ ok eleven	Engages with question
171	**Alx**	It's a ^^^*[to Ili]* what's the English for 'fence'	Attempts to define main element ('fence')
172	**Kty**	Teacher *[but Res busy monitoring another's group work] [to Mar]* come on what's the English for 'fence '	Asks for L2 support
173	**Mar**	*[looks closely at the materials on their table]* this is no fence this is actually the Great Wall	Disagrees with Alx's definition and re-defines ('Great wall')
174	**Kty**	Ahaa ok this *[points in the picture addressing Ili]* this is the Great Wall	Echoes mar's definition
175	**Ili**	Because ^^ the protection	Proposes answer (1)
176	**Alx**	Yeah that's what I was trying to say for protection	Agrees with proposed answer (1)
177	**Kty**	Yes for protection	Agrees with answer (1)
178	**Alx**	For protection against	Attempts extension to answer (1)
179	**Ili**	Against inamic *[conflates Ro word for 'enemy' with English pronunciation]*	Provides extension for answer 1 ('enemy')

[CLU 1Q: lines 169-179/ Q11 in Annex]

In this conversational unit, the answer proposal emerges as the result of collaborative effort. It starts with the brief exploration of the question, followed by a brief clarification regarding the significance of the separating wall in the picture and then by the joint articulation of the answer. This CLU has clear learning value; the students seem to be tuning into each other's contributions, there is evidence of peer support for learning and very good effort to use L2. Nevertheless, at the risk of being pernickety one may say that the task is not fully explored in terms of depth. The students do arrive at the correct conclusion that the main purpose of the wall is defence/protection but they do not explore the parts of the question regarding where precisely would such a wall need to be built and why. It could in part be because the students at this stage are genuinely making an effort to sustain their conversation through L2. One argument in favour of this is the conflated word 'inimic' in move 179 which seems to suggest that there is more underneath but this is how far they can go in terms of L2 verbalisation. Nonetheless, this may also be because the students seem to lack the exercise of dialogic collaborative exploration in L1 as well. The evidence for this comes from some of the CLUs in which although students use just L1, their exploration of content in terms of depth does not go beyond a certain point. For instance, throughout the conversational unit 1C, L1 is used but students do not seem to notice or seek that opportunity to further explore verbally their own thoughts. The illustrations come from three different individuals: Eli/move 25 `this looks

like a vintage car'; Mar/move 31 'I think that queen must have lived at the same time with Cuza', and Tur/ move 35 'This car looks decidedly old'. None of these moves are followed by further explorations as to what elements in the pictures for instance make them assume the car or the queen are representative of a certain era. Thus in many instances the reasons they bring in support for their conclusions tend to be half stated or not always in relation to other competing justifications.

In short, the above presented scenarios represent instances when students do engage with task either cooperatively or collaboratively. The interactive pattern tends to be one of progressive and linear growth, with fairly sequenced and gently paced exchanges.

VI.2.2.2.3 Sustained content-related argumentation

Sustained content-related argumentation refers to those instances when students manage to evaluate peers' proposals, pose challenges, and defend or provide justifications for assumed position. It can also refer to a more critical kind of exploration of one proposed answer which is collaboratively evaluated trailed and then agreed on.

Noteworthy are the digressions which seem to host fairly well sustained argumentative exchanges. On e such example, is offered earlier in this chapter (please see CLU sample provided under VI.2.1.1 on pages 39-41). At the stage of exemplifying microanalysis on just one CLU sample (1J/Q2:35-73), I identify them as simply digressions; nonetheless, after examining several similar examples I incline to call these spontaneous clusters of exchanges *digressive explorative extensions* because they share certain features as follows. They constitute topic related digressions which may not lead directly or immediately to the answer for the task at hand, but which significantly contribute to a deep exploration of the content, bring to the fore content-related aspects that students identify as relevant and bring added value to the whole conversational unit in which they occur in terms of deep-learning. In addition, such extensions appear to verbally come in the form of better attempts at articulating one's thinking as well as trying to tap into a peer's stream of thought.

As touched upon in the analysis of the above mentioned CLU sample (please see VI.2.1.2 The cognitive value of the learning interaction pages 48-49), it is paramount to try to pinpoint what triggers these explorative digressions. Transaction 3A appears to be prompted by move 49, more specifically by Mrc's L2 ambiguous phrasing in L2 which leads to exchanges of deep semantic negotiation. Empirical evidence similar to this particular example could possibly lay the foundations for the argument which holds CLIL learning a prompter for deep learning. It is difficult to separate variables and clinically establish a causality chain, but in this particular instance the other contributing factors (task-based approach/small groups) are more distant than the linguistic element. In other words, it would appear that the presence of the two languages as a medium of learning comes to the fore in accounting for this explorative extension from Transaction 3A. In addition, Transaction 3B appears to be prompted by move 50b, more precisely by AG's estimation regarding the size of China. In this case, it could be argued that the explorative momentum is maintained through the use of mother tongue; the interplay of the two languages shows how they complement each other as medium for thinking. All of the described triggers here lead to deep-semantic negotiation of the students' intended meanings, which in its turn, in this case, generates the debates around the size of the country/population/average person. Furthermore, the digression in transaction 4 is in part prompted by the AG's direct challenge but also, in a more indirect fashion, by the slight ambiguity of the pictures in the poster.

Another trigger for such explorative digressions appears to be the different conceptualisations with which students work. The digression from the following CLU, 1P:Q4 is triggered by the different understandings of the features of a skyscraper. The whole CLU turns into an explorative conversation after move 59 when Ada's answer proposal reveals a conceptualisation of skyscraper that is different from the understandings that the other 2 more active members of the group hold. Transaction 1 starts by engaging with content and task at hand, but from move 59 onwards, the focus is diverted. The learning interaction is not focused on the pagoda towers with their traditional and modern features; rather students' primary focus becomes 'the conceptualisation of a 'skyscraper'.

54	**Cod**	Q4: Compare the traditional and the modern pagodas. Do people use them differently nowadays? *[reads Q4]* Compare the traditional and the modern *pagodas *[struggles with pronunciation]*. Do people use them differently nowadays? Did people use to live in a pagoda in the old days?	TRANSACTION 1A (negotiation of the definition of a skyscraper in relation to the two pagoda towers in the picture) Engages with question
55	**Ioa**	pagoda *[helps with pronunciation]*	
56	**Cod**	*[being silly doing a martial arts fighter impression]*	
57	**Vld**	Steady on you are not going to impress anyone	
58	**Cod**	fire place place*[reading on his own; 'place' corrects himself in the pronunciation]*	Engages with text
59	**Ada**	*[gesturing]* These are two like ^^ it's two house ^^ two sky ^^^ skyscrapers	Proposes answer (a pagoda tower = a kind of skyscraper)
60	**Cod**	Noo	Challenges answer proposal (1)/ move 59
61	**Ada**	Well yes because they touch the sky	Supports her answer proposal (1) Provides justification ('touches the sky'/hight)
62	**Vld**	What's the English for 'skyscrapers'?	
63	**Cod**	This is no skyscraper. Can't you see it's only got 4 storeys?	Maintains disagreement with answer proposal (1) Provides justification ('it's only got 4 storeys')
64	**Vld**	Is it not? *[inspects the picture again]* Oh yes that's right this one's only got about four to five storeys	Makes his own judgment Supports challenge (move 60) brought to answer proposal (1)
65	**Ada**	Alright but then this one must be a skyscraper*[points to the pagoda in picture 1]*	Hold on to her argument Proposes new context (picture) to be considered as classing for a 'skyscraper' (2)
66	**Vld**	Not really ^^^ neither this nor that one	Disagrees with (1)&(2)
67	**Cod**	Neither of those are skyscrapers	Disagrees with (1)&(2)
68	**Vld**	It's nowhere close to 100 storeys	Justifies his position (feature of a skyscraper)
69	**Cod**	Only the Eifel Tower could be considered a skyscraper	TRANSACTION 2 (extends definition of skyscraper to ET) Extends definition of skyscraper to ET (3)
70	**Vld**	Well that one isn't quite a skyscraper because it's not a building	Disagrees with (3) Provides justification ('not a building')
71	**Ioa**	*[to Ada points to picture 1]* This one's got 10 storeys	Brings back into discussion 'height' initially mentioned by Ada move 61
72	**Cod**	Oh yes the Eifel Tower is as high as that so it is a skyscraper	Maintains extended definition (3)
73	**Vld**	Well yes but technically speaking it's not a building	Acknowledges height as a feature Points out inconsistency re (3) (another feature should be considered, type of structure/'not a building')
74	**Cod**	Well I read that somewhere ^^^	Maintains his extension of

74'		yes this one here is not a skyscraper	definition (3) Justifies by vaguely sourcing it ('read it somewhere') TRANSACTION 1B Restates challenge posed in move 60 to answer proposal (1)
75	**Vld**	Yeah that's right	Supports challenge in move 74'
76	**Ioa**	This is 10 storeys high	Brings back into discussion 'height' (which she also mentions in move 71)
77	**Cod**	It's a building which is some sort of hotel ^^^ It's a building	Proposes answer (2) Attempts a mention of a feature/function of the building as an indication of modernity 9'some kind of hotel') but does not sustain this line of thought
78	***Vld***	Yeah I know	Agrees with (2)
79	**Cod**	*[Side talking to Vld]* xxxxx	
80	**Ada**	*[trying to catch C's attention]*	
81	**Ioa**	Anyway what should we be looking at next?	Attempts to bring closure to CLU
82	**Cod**	This is a hotel ^^^ a this a ^^^ What is that called ^^^ this is a ^^ inn *[looking at picture 4]*	Seals agreed answer (2)
83	**Ada**	*[points to picture 3 for Cod]* Alright ^^^ the ^^^ xxxxxxx	Agrees to move on to the next sequence on the storyboard(management-of-learning starnd)
84	**Ioa**	Has he had a turn? Ok then I'll read next, shall I?	
85	**Vld**	Anyway let's move on to this	

[CLU 1P: lines 54 – 85/ Q4 in Annex]

The core of the argumentation in Transaction 2 is built around two main features that is students dispute 'height' (number of storeys) and type of structure (building as opposed to an iron lattice tower). Moves 72 and 73 show particularly Vld is capable of distinguishing between different criteria and almost suggests that some criteria are more important or overrule others in defining a concept (the Eifel tower may be as high as a skyscraper but because it is not a building as such cannot class as a skyscraper).

As hinted above this whole CLU displays the features of a digression, particularly transaction 2 can class as a well-rounded explorative extension. The task is touched upon (pagoda tower as some kind of hotel) but not developed in the way in which the content teacher would envisage. This CLU embodies a learning interaction that represents what the students identify as relevant rather than a fulfilment of the given task. It very much depends on what one wishes to define by successful learning interaction. If this is

measured in terms of providing expected answers and accumulating knowledge then this particular CLU would bear little value. Nonetheless, if one holds as successful learning, knowledge exploration and transformation, and exercising one's mind then this CLU is providing a different picture altogether.

Still on digressive extensions prompted by different understandings, the following CLU, 1O (201-226:Q9), reveals argumentative exchanges around the conceptualisation of master/expert v. main hero in a story.

201	**Adw**	Question number nine Let's try nine *[reads out the question/initiates CLU]* What do you think is more important to be a strong warrior or to master the art of contemplation?	TRANSACTION 1A (ranking the characters in terms of level of skill) Engages with question
202	**Rux**	Did we have a go with number 8?	
203	**Mrc**	Who is the master?	Tentative identification of the focus of the content ('master')
204 204'	**AG**	It wants to say the warriors ^^^ the master is not here	TRANSACTION 2 (clarification of focus of content at hand) Engages with text briefly in a more personal space (it=the text) Identifies ('warriors') as the focus of the given content Identifies related concept 'master' as absent from materials/poster
205	**Rux**	The master^^^	
206	**AG**	If he correctly understood the question he read out for us	Matches information available on the poster against the elements present in the question read by peer Identifies an element of ambiguity
207	**Mrc**	*[nods]* This is xxxx	
208	**AG**	Chances are that he misread the question I think he misunderstood because it's impossible to have said that *[checks the question on the Q sheet himself]*	Persists in his intention to clarify the inconsistency
209	**Mrc**	Well yes if we saw ^^^	Tentative observation regarding the difficulty of establishing the ranking without having seen the film
210	**Adw**	Master! Master! Yes this is the master [Panda] and this [disciple Tigress] ^ and she is very skilled too	TRANSACTION 1B Proposes answer 1(master=Panda) Makes addition which counterbalances his own proposed answer in terms of assertiveness 9indirectly admits he is not certain)
211	**AG**	She is second in rank fist comes master 'Shifu'	Clarifies the ranking of the characters for Adw Proposes answer 2 (master=Shifu)
212	**Mrc**	*[points on the picture at the characters in the picture]* This is the first, then the second, the third	Proposes answer 3(a ranking of the characters in terms of level of skill based on what is available on the poster)
213	**AG**	First comes master Oogway and then Tai Lung	Challenges answers 1&3 Identifies as 'masters' the highest

			ranking senior master(Oogway) and the antihero (Tai Lung)
214	**Adw**	well the master is this the Panda the big Panda *[gesturing for fun here]*	Maintains his answer (1) proposed in move 210
215	**AG**	the fat Panda	TRANSACTION 3A (fun digression around Panda's physical appearance)
216	**Adw**	the fat panda yes	
217	**Rux**	The fat and the xxxxx panda	
218	**Adw**	Aaaa ^ *[starts reading out]* ten *[attempts to bring closure to this CLU]*	
219	**AG**	That Panda alright that panda becomes a kung fu master but Oogway and Shifu can do stuff that not just anybody can do	TRANSACTION 1C Maintains and extends his answer proposal (2) in reply to Adw's move in move 214
220	**Adw**	Aaaa ^^ the this panda that ^^^	TRANSACTION 3B (fun digression around Panda's physical appearance)
221	**Mrc**	big and fat	
223	**AG**	No panda big and fat but this panda is big and fat	
224	**Adw**	And this ^^^ how do you say ^^^ *[starts miming karate moves]*	
225	**Mrc**	this is xxxxx	
226	**Rux**	Check this out! *[going through the rest of the story board]*	

[CLU 1O: lines 201-226/ Q9 in Annex]

The triggers are a complex interplay of perceived ambiguity on AG's part, and different conceptualisations of the notion of 'master'. The poster contains 5 pictures of the five disciples in Kung Fu panda one of whom (Panda) is the main hero in the film. Both grand master Oogway and master Shifu are absent from the poster, and this is what AG identifies as confusing. His line of reasoning is based in part on knowledge of the film and in part on his understanding of 'a Kung Fu master'. Thus he deduces that something is not quite right in the materials (absence of the highest ranking masters from the poster but a mention of the phrase 'to master the art of contemplation' being present in the text and question); alternatively he reasons that Adw's reading of the question is inaccurate as according to his understanding of the story Panda is not the highest ranking master in the Valley of Peace temple. This becomes clear in line 204 when AG assumes the mistake in attaching the label of 'absolute masters' to the five disciples 'it wants to say warriors'. In addition, there is an interesting extension AG makes regarding his definition of a master which he also extends to the antagonist of the film Tai lung in move 213, which reveals that he does not operate with simplistic schemata (the 'goodies' are the masters and the 'baddies' cannot be; rather he defines

master in terms of level of skill as Tai Lung poses a serious challenge to both highest ranking masters in the film). Adw's answer proposal reveals a judgment made against general knowledge of narrative/ storylines more than knowledge of the film. To him it seems that since Panda is the main character in the film ('the hero who saves the day') he could be classed as a master as well.

The way in which the transactions succeed one another shows again a point made earlier about the spontaneous nature of the students' interaction within these conversational units, and how the transactions focused on clarifying the central elements of the content at hand are interwoven with transactions attempting/ articulating answer proposals and digressive extensions. The precise task set (to ponder over the importance of being a skilled warrior v. being a master of contemplation) is touched upon but not fully answered as students get distracted and slip into a fun digression regarding the physical appearance of the panda. Thus one can argue here that the cognitive value of this CLU comes from this opportunity to explore one's understanding of conceptualisations such as 'hero' 'master' and not necessarily from pinpointing an expected answer.

Although this section is centred on a discussion of the content-grounded strand, one observation about the use of language cannot be overlooked. The fun digression 3A+B shows students switching to L2 in order to be able to have a laugh without being regarded as naughty. Another brief observation concerns the way in which students often use intonation to compensate for the limited complex structures they have available especially when they want to convey nuanced meanings and use L2. In line 223 'No panda big and fat but this panda is big and fat' Adw actually means to say pandas are usually relatively large animals but this one is really big. Nonetheless, all of this and similar language related points are going to be part of a broader discussion later regarding code switching and the functions students attribute to the two languages to further their learning conversations.

Another interesting type of digressive extension shows students complementing the epistemic ground, whereby they deal with the propositional content, with an existential one, in which their identity is fore grounded. In the example provided next, CLU 1J:Q1, one can witness a digression in which students position themselves in relation to one another in terms of what defines them. This appears to be triggered by the way in which

the overall activity is set up. The students are given a large storyboard with several sequences following a narrative line and are told to assume that they are travelling through an enchanted forest by progressing from one sequence (text/question) on to the next one. The digression also appears to be prompted to some extent by the perceived attractiveness of some of the elements on the storyboard (sword and jewellery cut-outs). Transaction 2 shows students engaging in a few exchanges in which they almost assume the role of ancient travellers and choose sword styles to reflect their personality. It is interesting to see how each student grabs at least two turns and also the way in which they use emphasis on certain words in order to stress what defines them. In other words, at times students make these learning interactions events in which they learn about one another; if one paid attention to the characteristics of the swords the boys pick up and corroborated this with knowledge of their personality, one could find out a great deal about how each of these boys wishes to be perceived by peers.

This digressive transaction (2) occurs at the end of a conversational unit (CLU 1J:Q1) which is generated by a task asking the students to decide on two Celtic coins out of a choice of 4 coins (expected answers - coins 1 & 2). The learning interaction between students streams only through L1 with L2 instructions and some non-verbal elements. Besides the digressive extension, the argumentative interaction focused on choosing the Celtic coins needs consideration.

4	Cdr	*[silently inspect the story board]*	**Instructional episode** Conforms with res' instructions
5	Mrc	ahaaaa	Confirms comprehension of instructions
6	AG	*[follows the text with his finger pointing to story sequence 1 and Q1 repeatedly for his mates]*	Engages with materials (Text and Q sheet) Suggests to peers his understanding of method to be followed in order to engage with task
7	Cdr	Look so this is what we are supposed to be looking for here ^^ two are Roman and two are Celtic *[pointing on the story board for peers]*	Shares his own understanding of Res's instructions
8	Res	What does the question say? What does the question say children? [Read the question first	Instructions
9	all	*[inspecting the materials]*	Conform with Res's instructions
10	Res	I'll just say one more thing and then I'll let you get on with it	Further-instructions
11	Cdr	*[Attempts to say something out loud but interrupted by Res' instructions redirects his attention to his group and briefly points to coins 3 and 4]*	TRANSACTION 1A(answer proposal 1) Tentative answer proposal (1) by nominating coins 3 & 4

12	Res	Children just a minute. What do we do? We get together, we first read the question, after we read the question we look at the image, read the little text there try to understand it and try to come up with the answer to the question Ok?	**Instructional episode** Further-instructions and comprehension check
13	Cdr	We already understood this, we even finished reading it	Confirms to Res comprehension of instructions
14	Res	Good very good. Now ok	Brings closure to instructive episode
15	Cdr	So we need to find out which ones are the Celtic ones ^^^ I have a feeling these are the Celtic ones *[pointing to 1 and 3]* ^^^	TRANSACTION1B(answer proposal 1a vs, answer proposal 2) Restates his understanding of the aim of the task Makes revised proposal (1a) by nominating coins 1 & 3
16	AG	*[goes on to inspect 1 and 3]:* Nooo	Engages with/assesses Cdr's proposal Challenges Cdr's proposal (1a) without providing justification
17	Cdr	*[points to no 4]:* at least this one [coin 4] is not Celtic ^^ look at the Roman's head on the coin	Provides support for his proposal (1a)
18	AG	*[nods in agreement with Cdr re coin 4 as Roman]*: I'd say this [coin 2] and the other one [coin 1] are Celtic	Agrees with Cdr on coin 4 as Roman (by nodding) Proposes alternative answer (2) by nominating coins 2 & 1
19	Mrc	*[Silently points on the storyboard to coins 4 or 2 and 1]*	*Proposes alternative answer (3) tentatively by nominating 4,2 &1
20	Cdr	*[to AG]*: No no it this [1] and this [3] ^^^ *[to Mrc]* she said that **two** are Celtic and **two** are Roman	Challenges answer proposal (2) Challenges answer proposal (3) and provides justification Maintains his answer proposal (1a)
21	AG	*[pointing to 2 and 4]:* so ^^^ ^^^*[inspects coin 2 closely]* both of these are Roman	Rules out coin 2 as being Celtic
22	Mrc	*[Restates and points on the story board]* These are Celtic and these are Roman because ^^^	Attempts to articulate framing for proposed answer that would include a justification for the choice
23	AG	*[pointing on the story board Celtic 1 and 3 and Roman 2 and 4]*: Celtic and Roman [coins] ^^^ these are the Roman ones	Validates (1a) as agreed answer, i.e. 1&3 /Celtic and 2&4 /Roman
24	Mrc	*[pointing to 1 and 3]:* yeah that's right these are the Celtic ones	Restates the first half of the agreed answer (1a)
25	AG	[pointing to 2 and 4]: And these are the Roman ones	Restates the second half of the agreed answer (1a)
26	Mrc	Yeah exactly	Seals agreement
27	AG	Check these out! *[points to the cut-outs of swords pinned on the story board]*	Off-task TRANSACTION 2 (Type of sword -defining one's identity) Initiates off-task transaction Diverts peer's attention to sword cut-outs on the story board
28	Cdr	I like this sword	Expresses own preference
29	Mrc	**I** like this one	Expresses own preference
30	Cdr	And **I** this one	Reinforces his own preference
31	AG	I like this one	Expresses own preference
32	Mrc	This is **my** favourite	Reinforces his own preference
33	AG	**Mine** is this one	Reinforces his own preference
34	Cdr	This for me ^^^ xxx	Restates his own preference
35	AG	This one's Roman (coin 2) and this one's Roman too (coin 4) that's Celtic (coin 3) and the other one's Celtic too (coin 1)	TRANSACTION 1C Provides summary of agreed answer

[CLU 1J: lines 4-35/ Q1 in Annex]

The way in which transaction 1 holds together throughout the whole conversational unit shows the students' ability to remain focused on the conceptual aspects explored and discussed (move 11/Tr1A, then 15-26/Tr1B and move 35/Tr1C). This pattern which describes a rounded-off type of negotiation of one or several competing answers may occur in part because of the interest manifested by the students in the investigated item but it can also be explained in part by the way in which the whole activity is set up for the children. They tend to revisit/rearticulate the answer towards the end of a conversational unit either in L1 or they transfer it in L2, because they are aware that usually at the end of the lesson there is a teacher-led follow-up discussion of their answers.

A further aspect regards the internal dynamics of the argumentation per se. When observed on film a great deal can be lost in appreciating the depth of the cognitive engagement that the students undertake here. Transaction 1B (moves 15-25) lasts for one minute and twenty seconds, and much of the negotiation of the answer proposals is complemented by gestures (pointing to relevant coins) thus making it hard to what is being negotiated and in what depth. However, on a closer look the following pattern emerges in terms of answer proposals arisen throughout the unit:

- (1) coins 3&4 by Cdr/move 11
- (1a) revised proposal coins 1&3 by Cdr/move 15
- (2) coins 1&2 by AG/move 18
- (3) coins 4,2,1 by Mrc/ move 19
- (1a) maintains earlier proposal Cdr/move 20
- (1a) validated as agreed answer by AG/23
- (1a) accepted as agreed answer by Mrc/24
- (1a) restated as agreed answer by AG/25
- (1a) summary of agreed answer by AG/35

Line 20 reveals a decisive move for the course of the argumentation. Cdr in just one move challenges 2 answer proposals coming from 2 peers. Cdr points out the inconsistency in Mrc's answer (3) and challenges AG's answer proposal (2), however, without providing justification. Looking at the prominence of answer proposal 1a (Cdr's choice) throughout the transaction is becomes obvious that as a more persuasive member in this group Cdr puts his answer proposal through. It is interesting to explore whether AG's abandonment of his answer proposal (2), also the expected answer, is due only to the more persuasive interventions of the more verbal peer. The

explanation AG offers, in the follow-up/stimulated recall interview, reveals a slightly different picture than what can be inferred only on the basis of the dialogue available from class.

Moves 18 and 21 are essential in understanding AG's line of reasoning. He first agrees on coin 4 as Roman, then in move 21 he rules out coin 2 as being Celtic in light of Cdr's insistence. However, AG is a strong learner and can hold his own, if less verbal then other children. The decision he makes to go with answer 1a is not only a result of peer pressure but also the result of a tacit re-evaluation of coin 3 against something stronger, i.e. his previous knowledge of artefacts from advanced and primitive civilisations. Coin 2, which although bears a Celtic symbol, is the shiniest coin, and it is this detail that determines AG to abandon his initial proposal (2) and to adopt Cdr's proposal (1a). It is the criterion based on which this evaluation is made that is important to note here. Although in previous lessons students were introduced to Celtic symbols, AG chooses to activate a different knowledge set regarding the appearance of the object (silver/ new looking coin/ advanced civilisation) as opposed to the expected knowledge set regarding the symbols of Celtic lifestyle (horse/wheat/Celts/farmers). This suggests that AG readjusts his initial inference largely against certain knowledge previously acquired (history lessons or outside school).

It needs to be said that conversational units or transactions of sustained argumentative interactions do not necessarily involve a heated exchange between group members and does not necessarily need to have several competing answers for the task. In-depth exploration occurs also when students are contemplative and develop further one answer proposal or one supporting explanation as seen in the below example.

170	**Cdr**	Ahaaa because this is a dam	Transaction (exploration of the features of a dam/Roman aqueduct) Proposes theory (1)
171	**AG**	*[reads to himself from the storyboard as not entirely convinced by Cdr's theory]*	Inspects materials in order to form his own judgment
172	**Cdr**	Yes this is a dam look at it and they [Romans] destroyed it to let the water flow	Maintains theory (1) Provides further elaboration regarding purpose of the structure(1a=let the water flow)
173	**AG**	Yes you are right it looks like a dam ^^before it was without this stuff [the arches/holes in the aqueduct] but now it's a dam *[compares the waterfalls picture to the aqueduct one]* and the water level came down because beforehand it was up to here *[points to the first row of arches in the aqueduct]*	Agrees with elaborated theory (1a) Extends Cdr's elaboration (1b= water was as high as the second level of arches in the aqueduct)

174	**Cdr**	don't think so	Disagrees with supporting explanation (1b)
175	**AG**	no seriously look ^^look even up to here *[points to the second row of arches in the aqueduct]*	Maintains supporting explanation (1a)
176	**Cdr**	Not sure about that	Maintains disagreement but in a more tentative way
177	**AG**	Alright then what explains the holes in the dam unless the water had to flow through that high up? *[pointing to the second row of arches in the aqueduct]*	Challenges Cdr to provide an alternative explanation to (1b)
178	**Cdr**	Alright then perhaps you're right ^^^ where's nine?	Tentative acceptance of supporting explanation (1b)

[CLU 1J: lines 151-178/ Q8 in Annex]

This transaction follows from an exploration of the content focus and a brief instructional episode; it starts with a quick agreement regarding the fact that the structure in the picture represents a dam. During this conversation the students are looking at pictures on the storyboard which represent waterfalls (Celtic world where nature/water are regarded sacred) and Roman aqueducts (human intervention in the natural course of water by a more advanced civilisation concerned with innovative ways of using water power). A link is established between the Celtic way of life/waterfalls/unspoiled nature and progress/change/Roman aqueducts/tempering with nature throughout the whole CLU. The boys seem to agree on the overall purpose of an aqueduct (to allow the flow of water); but AG's persuasive moves are noteworthy here. He does not attempt an imposition of his explanations; rather he insists on reasoning with Cdr based on what he regards as evidence, i.e. the architectural features of an aqueduct as seen from the picture. Moves 175 ('No seriously look...') and 177('Alright then what explains ...') are a clear invite to collaboratively evaluate and establish the validity of his theory (that water used to be as high as the top row of arches prior to putting the holes through the dam). Then Crd's reaction to these persuasive moves reflects, on one hand, active listening as he accepts AG's explanation in the absence of a challenge he can think of. On the other hand, the tentativeness with which he accepts AG's explanation can indicate a certain underlying competitiveness between the two boys, but it can also show strong-mindedness, i.e. a desire to undertake one's own in-depth exploration as opposed to blindly following answers suggested by peers.

The last example that is going to be provided under the heading of *sustained argumentation* represents a type of conversational unit in which the collaborative mode takes over and the students jointly develop a hypothesis. The question asks them to work out why the Romans as a conquering force regarded the Druids as a threat. The learning interaction is sustained mostly

in L1 with only little L2 use but the provided text/question & task are in the medium of the target language. According to the set up of the analysis, by three strands, the greyed off functions in the analysis column belong to the language-oriented and the management-of the learning strands. They have been brought into this last example of analysis focused on the content-oriented engagement in recognition of the fact the different functions moves have are so tightly interconnected to the point that in many cases explanations are not possible without a consideration of all three.

139	Cdr	*[starts reading from the storyboard]:* So seven where is seven? ^^^ The druids were responsible for ^^^ these are the druids ^^	TRANSACTION 1 (clarification of text focus/defining 'druids') Organises his own learning (think aloud + orientates on the materials) Engages with text Clarifies part of the focus of text ('the druids')
140	AG	droizi *[slightly odd pronunciation]*	Echoes key word('droids')
141	Cdr	you pronounce it druids not droids. The druids ^^^ so let's answer this question, shall we? Question 7 Why do you think the Romans wanted to get rid of the druids? ^^^ Well ^ the ^ why would they want to destroy the druids?	Provides support to AG with correct pronunciation of the word 'druids' Re-states key term Directs group's attention towards the question Invites peers to participate Engages with question Rephrases question in L1
142	AG	Which droids?	Asks for clarification
143	Cdr	The druids the druids	Provides basic clarification (through clear pronunciation in L1)
144	Mrc	The druids are ^^ barbarians	Provides elaborate clarification (defines druids as 'barbarians') Collaborative contribution

145a	Cdr	They are the Celts' priests ^^	145a:Provides alternative clarification (defines druids as 'the Celts' priests')
145b		listen to yourself saying that 'droizii' ^^what's your mind on? Star Wars? ^^	145b:Gentle criticism towards AG's pronunciation slip ('droizi')
145c		Oh dear they are going to shoot you with their laser beams like in Star Wars ^^^	145c:Off-task digressive move re AG's apparent confusion between (the Star War droids and the Celtic druids) –slightly teasing TRANSACTION 2 (hypothesizing about the rationale behind the Romans' intention to dispose of the druids)
145d		hold on a minute ^^	145d:Shifts focus on topic/manages his own learning actions in a brief think aloud ('Hold on a minute')
145e		I think they want to conquer them I think they want to conquer them ^^^	145e:Makes answer proposal (aim: 'conquer/gain control')
145f		to actually gain control over their knowledge ^^ to steal their ideas xxxx	145f:Provides explanation(purpose: to steal ideas')
146	AG	To get wealthier	Proposes alternative explanation(purpose: 'get wealthier')
147	Cdr	No ^not really	Expresses disagreement with AG's alternative explanation
148	Mrc	Guys this is because the Celts were successful through their priests	Articulates another explanation (cause: because the druids ensured the success of the Celts)
149	Cdr	Yeah ^^ because they could read xxx	Agrees with Mrc's explanation Further elaborates on this (the druids could read)
150	Mrc	yep so that the Celts would lose out and they'd win [the Romans]	Concludes agreed hypothesis Signals closure to CLU ('so')

[CLU 1J: lines 139-150/ Q7 in Annex]

The build-up starts half way through Transaction 1 with moves 144 'barbarians' and then 'priests' (145). Then, collaborative thinking exercise takes off in transaction 2 in which two aspects are reasoned in great depth: the exact reason for which the Celts were considered a threat by Romans (148/provided support to the masses and 149/ were educated), and the rationale for eliminating the druids (145 control over their knowledge and 146/ AG wealth). The line of reasoning here reveals fairly deep engagement

with complex concepts such as 'motif' and 'tactics' which, if put in the context of a group of 9-10 year old boys, needs to be acknowledged as a genuinely valuable learning exercise.

Based on the above examples as well as other similar ones, it can be inferred that *opportunities* for argumentation are prompted by perceived ambiguities, intriguing facts or conflicts/ inconsistencies between peers' views, or between what students hold as true and what the materials reveal. What seems to heighten the possibility of a *sustained* type of argumentation is a close analysis of the focus of the topic or task. As far as this data set is concerned, the digressive extensions could be regarded as the very nucleus of the higher-order argumentative kind of learning interaction.

In short, sustained argumentation appears to emerge in conversational units in which cumulative exchanges where focus of content and task are explored are interspersed with more explorative type of talk. It is in these explorative extensions where students become more verbally explicit about what supports their answer proposals/challenges, and their line of reasoning.

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The analysis of the strand representation across CLUs illustrates the way in which students manage their focal attention. Moves of two or even three functions (propositional/linguistic/managerial) are an indication of a tri-focal type of engagement whereby students appear to nearly simultaneously attend to more than one aspect of their learning in an integrated fashion. There are, however, instances when conversational units display a more uni-sided appearance in terms of strand representation, but as explained this can be accounted for by various pedagogical misjudgements such as poorly designed tasks and lack of variation in tasks with regard to differentiated learning.

The content-grounded strand represents the backbone of these conversational units where one can witness varying degrees of complexity in terms of matter-centred argumentative engagement. Perhaps with this part of the analysis it becomes obvious again that interpretation of discourse is problematic if undertaken based on isolated categories. Solely based on sequencing of transactions and interplay of strands one cannot make a sound

judgment as to the cognitive value of any learning interaction. Thus in many instances the discussion in this section has not taken into consideration just the argumentative significance of the way in which moves are sequenced in relation to one another, but also the cognitive value of these moves has been highlighted.

Therefore, it may be safe to argue now that any investigation of the learning interaction needs to complement the search for patterns with in-depth observations regarding the value of the moves/ transactions that form these patterns. This is just in the same way in which earlier in this thesis, I have argued that an analysis of the dialogic exchanges without a consideration of the non-verbal contributions and relevant layers of context may not do justice a CLIL type of learning discourse.

The following section is going to follow the analysis of the substance of the learning interaction in greater depth by looking at the higher/lower order thinking involved and the types of knowledge activated.

VI.2.3 The substance of the learning interaction

In the previous section concerned with interactive patterns, I have looked at the dynamic generated by the students' contributions and, only when relevant, I have made some observations regarding the level of depth in the students' work on understanding (conceptual/linguistic).

In this section, I shall first look at the cognitive value of the interaction with peers, and then I shall complement this with a discussion centred on the interaction with the MKO.

VI.2.3.1 Emergent IDZ in the interaction with peers

In this sub-section, the analysis concerns the cognitive (propositional and linguistic), and metacognitive engagement (management of learning) displayed in the conversational type of learning interaction. More specifically, this involves an exploration of evidence indicative of the higher-order thinking on three fronts: propositional, linguistic and managerial. The central theoretical concept employed here, Inter-mental Development Zone is borrowed from Mercer (2000).

As a preamble to the discussion by strands, I would like to reiterate the complexity of learning interaction in which these students participate, i.e. the multiple planes students attend within brief exchanges and even through just one line. One such example comes from a conversational unit provided in sub-section VI.2.2.2.3 [CLU 1J/139-150: Q7]. Cdr' contribution (line 145) is in fact a cluster of moves, each serving a different function (145 a, e & f - content/task; 145b – language/pronunciation; 145d self-regulation, and 145c - fun digression). Witnessing such a cognitively potent contribution, especially the way in which the student directs his focal attention between different aspects of learning, makes one realise the versatility of which students can become capable, and the potential this type of learning approach could have to foster strategic competence.

The analysis which follows is going to provide examples of cognitive processing and types of knowledge activated to the extent to which these are observable and reasonably inferable. A great deal more is going to be available in a future section on the interaction with the task where students are more explicit about their learning actions.

VI.2.3.1.1 The nature of the thinking exercise

This is not based on a strict hierarchical classification of higher order processes as there is recognition of the overlapping between these and the fact that any process may serve as a subset for another. There is evidence of emergent analytical and critical thinking (initial observations, tentative explanations, analogies, inferential reasoning and basic hypotheses).

One of the cognitive processes of transferring information, which students appear to employ quite often, refers to *drawing analogies*. In other words, these learners tend to compare/contrast new contexts with known ones, and then they extend features from familiar situations to newly encountered scenarios they seek to understand. Perhaps, a template phrase could be extracted from students' verbalisation of their analogies '*something is some kind of/like/does more or less the same as...*'. For instance, students explain relics and pagoda temples in terms of the more familiar Orthodox icons and rituals on grounds of their archaic looking features. Similarly, the role of a spiritual leader in Ancient China, Confucius, is likened with that of an American Indian shaman through based on certain common features (e.g. assuming pastoral responsibility of a community).

Inferential reasoning is also frequent, and it usually takes the form of observations and interpretations students make based on evidence. What is interesting to notice here is that the more difficult the L2 text is, in terms of accessibility to students' linguistic level, the greater the inferential thinking becomes. The inductive line of reasoning students seem to follow here is '*if this can be seen then this must be the situation/case*'. At times, unexpected associations can be observed especially when the L2 is not well-pitched and the content becomes obscured by the difficulty posed by the complexity of the language. In this instance, although the students are expected to look at various likely features to be recognised in a wealthy Chinese household, the few elements they put together leads one of them to an inference which tells a great deal about the assumptions and underlying knowledge she activates.

29/Cod Swimming pool is this one look; 30/Ioa That word there is 'floor'; 31/Cod This has to do with ^^^ swimming pool; 32/Ada Oh it means that they were a rather dirty people ^^^ look dirty floors [1P: lines 29-32/ Q3 in Annex]

Ada's inference around peoples' degree of cleanness needs to be regarded against the backdrop of the previous contributions from Cod and Ioa who

identify key words in the text ('swimming pool' and 'floor', respectively). Ada combines these with a key phrase she herself identifies in the text 'dirty floors' and infers that people must have been 'dirty'; hence the presence of water in abundance (a pool).

Another cognitive process that profiles in the students' interactive work is *hypothesizing* whereby the generic line of reasoning students appear to follow is: '*If these are the conditions/the information/the known elements then, this could be the case or it is less likely that this is the case*'. In annex 1L/194-230:Q11 lines 225-227 are of interest:

225/Mir 'it appears only special people like historians were accepted to come from this special place and visit', 226/Mar 'or scientists', 227/ Mir: yes and scientists cos' these people were wise enough which means would really have something to say ^^'.

Against a superficial understanding of the text which talks about the Otherworld as conceptualised in the Celtic tradition, students approximate a hypothesis which they feel resonates with the information from the text. Back in line 213 Mir reads about 'stories of visits from the Otherworld' which seems to be the main elements on which she elaborates when she deduces that 'historians were allowed to come from this special place and visit'. It looks like she mistakes 'story' for 'historian' and this is what gives her only a little part (one word) of her hypothesis. The rest she builds on her own interpretation of the situation presented by the text ('only special people that would have something important to say would be allowed to visit from the Otherworld). Mar joins into the same line of thinking and contributes with the idea that scientists would be another example of special people that would be allowed to migrate between the two realms. It needs to be acknowledged here that this exchange follows from a gentle reminder from the Res that the students should concentrate on exploration rather than collection of phrases from the text (see line 221). Thus one may argue that the MKO's prompting facilitated this exchange but the students articulate their contributions without any help.

A more specific type of hypothesizing are the *plausibility checks* which students often run, i.e. whole scenarios are checked against what students regard as logically plausible. For example, a group of year 4 students are looking at the possible features that can be recognised in a wealthy Chinese household, and one of the odd elements is being challenged. The relevant lines are 36-43 in 1Q /Q3. In line 36 Mar spots the odd assumption of the existence of a swimming pool in a wealthy ancient Chinese household ('Hold on

guys where do you see a swimming pool?'); in line 40 she reinforces supposition (This doesn't look anything like a swimming pool and they couldn't have had anything like this anyway') which then is fully articulated by Tra in line 43 ('This looks like grass must be like a garden or something ^ swimming pool in Ancient China not really'). The underlying evaluation here regards the criteria by which they should decide whether the square shape in the picture is more likely to be a swimming pool or a garden/courtyard. In line 41 Ili advances the speculation that this is likely to be a swimming pool because of its square shape, central position, in addition to having the phrase given in the attached list '... and this bit in the middle is the swimming pool it's got to be because we have the word given here'. Ili's judgment is based on immediate evidence which can look persuasive; nevertheless, Mar's and Tur's interventions demonstrate a judgement underpinned by understanding of that particular historic period, i.e. based on the likelihood of having such a feature in that era. An interesting addition is made by Kty in line 42 ('No one else got this answer') who judges the likelihood of the correctness of the answer in relation to answers from other groups.

Another interesting plausibility check students perform comes from a Year 3 group (annex 1P/Q3) but the lines of interest are 47(Cod) and 49 (Vld). The text which accompanies the layout of a wealthy Chinese household also contains an insertion of the years for the Han Dynasty period (206BC-220AD). The students mistakenly use the years to work out how long it took for the house to be built and make a straight forward subtraction of the smaller number from the greater one. The result is 14 and both boys agree that this is a potentially valid answer as 14 years can be a realistic interval of time for the erection of a building in ancient times. Based on this, their initial tentative assumption regarding the significance of the inserted years is reinforced, and they tacitly agree that this must have been the essence of the task. They are recycling some knowledge from previous lessons or history-related readings, but they are also applying an almost mathematical approach to this. In the same fashion in which in mathematical exercises if the result is the correct one then one can infer that the method followed is the right one, these students infer that since the resulted interval of time makes sense, this is what the task must have been about.

I have mentioned in the discussion above that some of the thinking that students display indicates certain underlying knowledge, often general or topic specific knowledge. The recorded learning interactions also reveal more

explicit use of different types of knowledge, some of which I shall illustrate next.

Challenges based on general knowledge often related to the topic at hand are frequent. As hoped, from the phase of the design of this CLIL History module, the conversational interactions show that there is ample scope for cross-curricular transfer and recycling of prior information which here ranges from an unattended mention from one to more elaborated interventions in which history or geography facts are being collaboratively debated. For example, at times, quite advanced knowledge is being displayed about ancient civilisations, see for instance line 14/AG: 'The Greeks appeared at the same time with the Egyptians ^^ they both have special graphology' (Annex 1D). A similar example can be found in Annex 1B/line10 where Tur makes a contrastive observation with regards to the advancement of the European and Egyptian civilisations (' ^^^ do you know the Egyptians were more evolved than the Europeans when^^^ this was invented ^^^ when this existed ^^^ was happening'). Further, the notion of sacrifice as a pagan rite is being recycled in an exchange about Sabrina the Celtic goddess of water (annex 1J:119-212).

A more confrontational display of general knowledge can be seen in Annex 1C (lines 12-18) which besides hinting towards Tur's type of personality, also given an indication of the competitive type of environment in which these students are educated. Similarly, challenges bordering teasing are quite common; for example in Annex 1C (lines 4-5) Tur who is one of the strong learners is simply teasing his peers (two girls) when he suggests that Ancient Greece belongs at the 'present' top of the arrow. This ties in with observations that can be made under the management-of-the-learning strand, more precisely allocation/assuming of roles; the show of knowledge is also a persuasive move in itself, if more or less consciously undertaken, with a view to gaining recognition from peers.

Besides topical knowledge, students also appear to draw on discourse and genre knowledge as well. In many circumstances they make assumptions or display behaviours or act in accordance with expectations all of which are indicative a heightened awareness of the discourse of the classroom based learning, the conventions of the educational discourse on a broader frame. This becomes obvious if one looks at all the instructional features that penetrate the conversational type of interaction (e.g. the sometimes over-carefully managed turn allocation, or the way in which usually the girls 'police' the boys' actions to make sure they remain engaged with the task almost

assuming teacher role within groups). In several instances, there has been explicit use of genre knowledge; more specifically, knowledge of narrative lines, character building and causality. One example comes from several groups of Y3 students who employed genre-oriented frameworks in order to reconstruct stories. In this particular lesson, students were presented with a series of American Indian pictograms and pictures of different members of a Sioux community. Three approaches were reported by the students:

a. Plot: maintaining focus on the development of the narrative line, i.e. create the story and then assign roles to characters;

b. Character building: starting from a portrayal of each character and then allowing of the characters' features to determine and drive the course of the action;

c. Causality relationships: clustering symbols, creating links between them in terms of cause-effect and then building coherence in terms of placing these connected parts into one whole story.

VI.2.3.1.2 Decoding and emergent fluency

Elsewhere in this study, I made the observation that the CLIL type of learning interaction looks more like a tri-focal type of learning engagement as opposed to just dual-focused. A great deal has been said in previous sections about the students' cognitive engagement with the content and task at hand. It is now necessary to add lenses of a linguistic nature in order to appreciate the extent to which working with both languages adds to the complexity of the learning event.

The analysis undertaken here takes into consideration the interweaving of three continuums in the process of meaning making. The individual/social continuum becomes evident in the making process as students swiftly move between more personal spaces and shared ones. Next there is the propositional substance/linguistic form continuum which needs to inform any analysis of CLIL discourse as there is are very subtle transitions of focus from processing the form/surface structure to processing the deep semantic meaning. Additionally, the L1/L2 continuum must be acknowledged with its

specificity (structural and functional similarities and differences) because the language of learning here is neither solely L1 nor L2. Rather, learning is carried out through an alternative interactive/dialogic communicative tool which emerges through the corroboration of functions and structural frames from both languages.

Meaning making appears to range from individual realisations to collaborative work on enhancing the complexity of any linguistic formulation. The former is an amalgam of private speech which extends into a more social space to the point where they take the form of utterances explicitly addressed to peers. There are instances which show students, at the decoding stage, thinking aloud while searching for features in text/materials that would enable them to approximate meaning. For example, in line 208(1J) Cdr identifies a less familiar word whilst working on accessing the text 'so who lives in the Otherworld according to the Celtic belief? ^^ 'Belief' ^ I didn't quite get this word'; after which he tries to approximate its meaning in line 211(1J) 'The Otherworld of Celtic belief was the dwelling place of the gods and other supernatural beings ^^ Ahaaaa it's where they meet with their gods what this belief word is on about'. In anoter conversational unit, line 232(1J) the same student comes to the realisation that 'feelings' are 'sentiments' which he works out through L1 similarity (line 226) but also by drawing on semantic fields as he recognises the hierarchical link between hypernym ('feeling') and its hyponyms ('Ahaaaaa ^^ This stuff about gelosy ^ angry happy moody').

Meaning making is also pursued collaboratively, in the form of peer-supported build-ups leading to enhancing linguistic complexity. Especially in production phase students rephrase, re-adjust and extend the complexity of utterances. I would like to pursue in some depth an excerpt from annex 1H/lines 30-48 from a task based on the idea of creating an Iron Age Celts Museum. Almost only in the medium of English, the students attempt to elaborate a discussion around the activity going on in the Celtic round house based on a section picture of a hut. This is preceded by a short sequence in which I model how they should exploit both text and picture so in this regard it could be said that the complexity of the students' work is to some extent enhanced by the intervention of an MKO. However, the Res leaves the group and the entire excerpt presented here illustrates activity that is initiated and sustained by the students. Linguistically, what is remarkable is the fact that with the text available and free of teacher's presence (monitoring a different group) the children make an effort to articulate their description of the Celtic hut and

lifestyle using as much as possible their own words as opposed to turning to the text and quoting from it. The effort is clearly a collaborative one as they follow from each other in their effort to arrive at what they judge to be, the most acceptable grammatical and syntactic form. Di opens the unit and Ma supports 'hut' as a central element for their attention. Then, Dan follows the girl's lead and further elaborates bringing in the second element. His hesitation may have been filled in with 'hut' which would have made this move a straightforward elaboration of the previous utterance. However, Ma seems to take it further and puts a more creative twist on it (line 34). She notices the two levels in the section diagram of the Celtic hut where some people are represented using the upper part of the house for sleeping whilst other people are depicted cooking and tending to the animals on the ground floor. Ma makes two contributions here by coming in with the phrase 'the ^ different people'. Firstly, she is aware that it is a noun Dan needs in order to finish what looked like an intended nominal phrase. Dan opens with a definite article - his possibly intended noun phrase but then he hesitates, and leaves it open. Ma juxtaposes to the determiner 'the' an adjective - noun structure thus completing the noun phrase. Secondly she draws the students' attention on this detail about different activities going on the two levels of the Celtic hut. She holds on to this for a few moves and has her peers constructively speculate until they became attuned (until they work it out that it is the cooking that she wanted them to take notice of). Joint working on linguistic accuracy is also noticeable; students seem to have the ability to recognise grammatical inconsistencies and to offer rephrased versions of peers' contributions (38/Di: people who make the feed, 39/Da: people who are making the food). Another element of interest is Di's progression throughout the excerpt in terms of achieving semantic precision. Her moves are fairly basic utterances that do not probably take her to the level of depth or sophistication that she seems to want to achieve in order to bring out all the details she notices in the picture. This sequence reads as a build up, as with every contribution her utterances seem to grow in sophistication 30/This is the hut, 36/ people who have the, 38/people who make the feed, 43/ and they are in the ^^they are helping animals, 47/ the people are feeding the animals. She uses what she has available in her active vocabulary, the verb ' help', but she feels this is not sufficiently specific which is reflected through her move/45 in which she makes a request from peers for a more specialised synonym 'groom'. The last utterance/47 reads like an indication of self satisfaction for arriving at the fully articulated form.

Another example of collaborative meaning making comes from a Year 3 pair involved with a task which focused on extracting the main ideas from a text on the building of medieval castles (annex 1S/pair2/ Ioa+Adw:1-43). What makes this example noteworthy is the manner in which the two students weave the reading of the text with their interpretation of the 'story' of the text. The text is fairly factual/scientific explaining some of the technicalities involved in erecting the walls of a castle (machinery, tools and materials needed). Students seem to have some difficulty with the more technical vocabulary, which is clearly above their level of understanding, but they still plough through and with every more familiar phrases they encounter they make another addition to what towards the end becomes their own perceived narrative of the text.

Adw is the one who drives the interpretative side of this meaning making exercise and Ioa complements his actions by contributing with reading out excerpts and also by providing linguistic assistance when needed. The first exchange reveals interesting underpinning assumptions of the two learners (3/'Such as cranes and bulldozers ^^ in other words this says hold on'; 4/'Since when have you turned into this English language expert?'; 5/'Well ^ yeah ^ three minutes ago *[laughing]')* . This seems to tell a great deal about attitudes towards what constitutes valuable/serious learning. Ioa implies 'you have to know this vocabulary in order to seriously claim that you synthesize the main ideas here', while Adw's outlook is that of a risk taker who relies on inferring meaning and therefore guessing and approximating, to him, is part of the learning exercise.

The build up of the emergent story needs to be noted here. The first phrase that resonates with Adw is 'hundreds of men' in move 7; he then resumes attempt to offer interpretation of text in move 11 but abandons because 'mallets and chisels' is a phrase that poses difficulty. The next phrases that resonate with Adw are 'man' and 'inside' following from Ioa's reading out in line 14. Thus with line 15, one can witness the emergence of the following story line: 'There are some men living in a castle but the castle is under attack. The men, however, need water which is outside the castle so they use telescopes to monitor the activity of the enemies in order to be able to sneak out and bring back provisions for the people in the castle'.

15/Adw: 'So *[gesturing]* the mens ^^ are aaa^^^ are ^^ are living in the castle'

17/ Adw: The inmic *[gestures]^^* enemy

19/Adw: Enemy are is attacking the people in the castle

21/ Adw: *[more reading out]* aha so the mens are building a castle to the long ^^^ time time

25/Adw: The mens are living in this castle

29/Adw: the mens are communicate how do you say 'communicate'

31/Adw: *[keeps gesturing suggesting 'togetherness/ contact']* communicate in the castle with the water outside the people in there would transmit messages and communicate with the outside world to be able to bring water into the castle see?

33/Adw: Ahaa the mens are looking through the *[mimes adjusting a telescope to see from a distance]^^* bear with me for a bit I can't remember again how to say that in English

34/Ioa: *[starts gesturing telescope or binoculars]* aha enemies

35/Adw: Enemies with attacking

[After requesting the English equivalent for binoculars from the Res]

40/Adw: *[miming looking through binoculars]* binoculars! To see the inamic enemy

41/Ioa *[miming looking through binoculars]* binoculars!

42/ Adw: That's it finally

The phrases that prompt Adw's elaboration/interpretation of the text can be identified as follows: 'hundreds of workmen' (line 6), 'man' and 'inside' (line 14), both of which seem to prompt the generation of the idea of 'enemies' from line 17 (Adw's reasoning appears to build up as follows: 'hundreds of men outside the castle and some men inside then the relation established is that of enemies/ people under siege). Then whilst he is reading out he clings onto the word 'lifetime' (line21) which determines him to bring in the idea of an old castle. Then the information from line 24 (about the system of defence of a castle) reinforces his initial inference about an inhabited castle under siege. Further in line 29 he reads about the strategic location of a castle near food and water supply which prompts him to round off his interpretation of the text. Finally, Adw places the word 'distance' he hears Ioa's reading out in line 32 against the already elaborated scenario and concludes that people in the castle needed to see in the distance in order to watch over the enemy's moves. In addition to the main line of meaning making, Ioa provides on-going support with vocabulary (lines 18 and 22), pronunciation (16), and reading out of the text. They compensate each other's actions as Adw remains primarily focused on the storyline and fluency, and Ioa supports Adw's progression and undertakes the accuracy checks.

The point that can be made here regards the language/content continuum, more specifically the difficulty one encounters from separating the two. In the above example, it may appear that Adw's progression of his interpretation of the text is prompted by certain more familiar words/phrases (surface structure). He notices these individual phrases but he then puts them into a coherent whole based on underlying topical/history and genre/narrative lines knowledge. There seems to be evidence here from the way in which he expands these key phrases and connects them that he does not stop at surface, superficial processing/recognition of the word form and equivalent translation. He goes deeper, beyond the mere word and engages with the concept as such by activating certain links and schemata based on which he generates a coherent narrative. Therefore, it could be argued that there is a relatively balanced bottom-up and top-down processing here.

A further example of collaborative meaning making especially focused on decoding the text comes from a Y4 group who are looking at a task regarding the features of different homes. More exactly, the task requires the students to work out why it was unlikely for the Celtic hut to catch fire although there was a fire going on day and night in the middle of the hut (see annex 2.3, lines 3-20). The comprehension check Di makes in line 5 and then all the build up in which all members of the group try to gain control over the precise focus of content and question. This climaxes with Di's brief summary of their understanding of the question and her theory about the structural soundness of the huts. In this example, one can see students clearly reverting to L1 in order to be able to gain focus over the deep meaning of both provided information and posed question.

So far I have discussed meaning making on the individual/social continuum and on the surface/deep semantic processing continuum. I would like now to turn to the interplay of L1 and L2, and make some observations regarding the way in which students weave the two languages not only in terms of functions but also, at times, structurally. An in-depth consideration of the functions of L1 and L2 through codeswitching is beyond the scope of this thesis; I shall, however, look at how the students use the two in a compensatory manner, and how, at times, the two languages appear to metamorphose.

This dialogic thinking exercise is possible here because of the corroboration of the two languages. I have followed a tendency still present in the field of CLIL to concentrate on 'the target language'; not to mention the fact that as

teachers (I and the CLIL class teacher), we contemplated the temptation to deliver the module by creating an immersion type of environment. I have come to realise that, at least at this stage of limited L2, both languages should be equally 'targeted' in terms of being nurtured to develop and evolve in sophistication. L2 input, especially when pitched above the students' linguistic ability, appears to be a generator of ambiguity. This fuzziness of the meaning can be a good prompter for higher-order thinking activity of the kind described in the previous section, of course, under the condition that a reasonable balance of roughly/fine-tuned input is maintained. L1 on the other hand, supports the explorative kind of digressions as it enables an on-line reasoning exercise. A dialogic type of learning should be conceptualised to enable students to draw on the resources of L1 and L2 as well as further competence in the use of both languages.

I have pointed out earlier the limitations in some of the students' interactions due to an initial perception of having to maintain their learning interactions solely through English. When a balanced mix of the two languages is used, it is interesting to see how linguistic knowledge surfaces and is applied to both languages. For instance, with the use of L1, aspects that crop up more often are awareness of style and academic register, and nuanced meaning:

- Poetic language used to convey the atmosphere of long past times Tur/40: 'in the old times' = *'vremurile apuse'*[annex 1A], and similarly 31/Mar: 'queen' = '*craiasa*' [annex 1C];

- Appropriate academic vocabulary (54/Teo: 'Oh ^^ I've been speaking in countryside type of register' 1G line 54);

- Synonymy, i.e. challenge posed by peer to convey semantic precision (In line 275 Cdr rephrases his answer in L1 and struggles to find 2 equivalent terms for 'strength and power' because both are usually translated 'putere' in Romanian. In 276 AG challenges Cdr to find another L1 synonym for 'putere' that would reflect the English 'strength'. In 277 Cdr raises to the challenge and provides the synonym 'forţă' 1J/Q15);

- Academic style in terms of syntactic phrasing (In formal register, opening one's sentence with 'so' is considered poor style (Mar advises Mir, line 305/annex 1L); and finally,

- Awareness of structural composition at word level (suffixation) Teo creates almost a *linguistic game by creating adjectives for countries* through playing with suffixes specific to adjectivation ^^^ and Ooops we slipped in 100 Romanian English Australian ^^^ Italian words (line54/annex 1G).

Unsurprisingly, the linguistic reflections around the use of L1 tend to concern aspects of use and effect of language. By contrast, based on this data set, the reflections concerning L2 are more of a structural nature, i.e. more attention is paid to form, which, in a way, reflects the predominantly analytic syllabus the students follow in school. Some aspects that can be notes are as follows:

- Grammar challenges (e.g. plural/singular agreement between Subject and auxiliary verb lines 39-43/annex 1I; choice of pronoun: lines 208-209/annex 1Q);

- Spelling (especially the use of those letters less common in L1 such as 'y' 23/Cdr advises that 'smoky' is spelled with an 'y' in annex 1N ; similarly, 90 Vld/ draws a peer's attention that 'very' is spelled with an 'y' annex 1N

- Pronunciation (There are various interventions throughout people's reading out, but comments about pronunciation rules are occasionally made 24/Mrc advises that 'y' and 'i' are pronounced the same annex 1N ; British vs. American pronunciation differences crops up but in a less explicit manner lines 15 and 16 in annex 1S).

- Punctuation (use of comma in enumerations, see line 78/Eli in annex 1N).

Linguistic knowledge is significantly activated here, and, understandably, the tendency appears to be to attend to discourse features on L1 and to more discrete items on L2.

The drive to put their ideas across pushes students to maintain their communicative flow whatever the language or the mix. At the boundary of the two languages two interesting phenomena profile: a certain type of codeswitching (a weaving of the two languages) and translanguaging (conflating words).

It is relatively obvious what determines students to switch to L1 in full flow of exploring a certain concept or while engaging in argumentation (a need to gain control over nuanced meaning and to cease the moment). It is interesting to understand what prompts students to revert to L2 in the middle of a mother tongue utterance, outside any pressing pedagogical constraint. For instance, the following example comes from a conversational unit in full swing, free of any teacher intervention and at a stage where there is no explicit signalling from students that they are preparing to wrap up their agreed answer into L2 for the teacher-led discussion session expected at the end of the lesson. Still AG/197 switches to L2 'I guess that's one way of doing it ^^^ they were making an honest buck ^^ *one money for one head' [**a coin per head he means*] (annex 1J). Perhaps in this example more important than the fact that he follows a Romanian fixed phrase ('un leu pe cap de om') which he approximates in English, is his desire to hear the conversation flow through L2. He could have stayed with L1 as the whole exchange with his peers is conducted through mother tongue but he nearly spontaneously breaks into L2.

Another interesting mix of L1 and L2 is when students' dialogue flows in mother tongue with insertions of L2 at, nearly, word level. For example, there are instances when students insert an English word into a Romanian structure and make it grammatically consistent. In Romanian the definite article is attached at the end of a noun; here students tend to take an English noun and attach the definite article in the same way they do in Romanian (e.g. 'He must live in this village' = 'trebuie sa locuiasca in village-ul asta', [annex 1J: line 54/ Ioa]).

Moreover, there are many instances when students conflate words an occurrence observed more frequently especially throughout the second half of the module. Perhaps most examples of conflated words come from risk takers, students with a greater focus on communication than accuracy. Some examples include Romanian words with an English sounding pronunciation ('zeus' in annex 1N/255; 'turn' in annex 1P/7; 'inimic' in annex 1Q/179 and also in annex 1S/17&40), collapsed words ('spires/spiers/piers/spiers' appears to come from the Romanian 'Spin'=Thorn, and the English word 'Spike' in annex 1O/240-241), approximated words by affixation with an English suffix (e.g. '-ation' in 'exatiation' for example or exemplification in annex 1R/105).

On analysis of conflated words and codeswitching of the kind illustrated above, it becomes tempting to contemplate this as evidence of emergent fluency in the foreign language. However, only a long term study focused on

the progression of these conflated words could make firm observations as to whether these crossbreeds filter through eventually into a structurally and semantically accurate L2, having served their purpose of supporting communication at a stage when more complex structures are not available. Or whether they crystallise and lay the foundations of variants of 'English' that depart somewhat from what is traditionally held as grammatically sound English. What is then defined by 'accuracy', 'appropriacy' and 'acceptability' of English variants is a much broader debate but nonetheless one in which CLIL practitioners and researchers need to take a stance in order to be able to define their own classroom practice.

In brief, this section has explored those aspects that are more prominent in this data set with regards to students' accessing and inhabiting an L2 mediated learning space. The evidence presented here indicates that the students' linguistic engagement adds to the complexity and cognitive value of the overall learning exercise under this approach.

VI.2.3.1.3 Management of perceived learning tools

As explained earlier and based on the data available here, I have come to regard learning under a CLIL approach as a tri-focal type of learning. I have also illustrated conversational units with strong management-of–the-learning strands. A closer look, however, is needed at the students' metacognitive activity, more specifically at what affordances they identify as available in their learning environment. In other words, it is interesting to see what students draw upon in order to manage their own learning as this is going to provide an indication of what they perceive as available learning tools.

First, students seem to use one another's expertise which is evident from the way in which they assume or allocate roles, and also from the way in which they form dyads during the more argumentative types of interaction. Some of the roles students assume during their learning interaction are: content area expert, general knowledge consultant, process manager/secretary, translator/language expert/communicator/risk taker, and internal auditor. This become evident in instances when they work in a cooperative mode, i.e. each member of the group is allocated a part of the task according to perceived competencies. For example, in a brief side talk kind of exchange from an instructional unit Di places pressure on Tud to make more contributions because the group perceive him as general knowledge/history

expert who should make substantial contributions on behalf of the group (see annex 2.2E, lines 298/299). Peers considered as linguistically advanced are often called upon in the decoding and production phases (e.g. Dani is one of the Y4 students on whom peers rely to drive the L2 production). However, there are instances when students do change roles which can be explained by a multitude of factors some of which are disposition on the day, interest in the task, and encouragement/inhibition from supportive/competitive peers).

Another interesting aspect to note regarding recognition of expertise is the tension that can arise at times between a tendency to work collaboratively and competition for leadership of the group. For example, Dani's point about peers' weak reading skills and necessity to allocate the task of reading out a text in a group to the students of higher linguistic skills shows great importance attached to gaining recognition as a learner and hints towards the relatively competitive environment in which they are educated 1R (moves 21-26).

Besides recognition of peers' expertise, students' also seem to be quite strategic about using their inter-personal relationships, which becomes evident from the way in which they join forces (dyads) in order to win arguments of a more or less academic nature. Most times the dyads are formed as follows: teaming up with a peer from one's circle of friends, or one peer lends their support to another peer whom they perceive as more assertive/more capable of undertaking a leadership position. Another element regards the gender divide which influences the students' work, with girls usually assuming an authoritative monitoring role in the teacher's absence. Students' personality and their identity as perceived by peers contribute a great deal in the shaping of the learning interaction as can be seen from allocation/undertaking of certain roles within the group.

Moreover, students seek support from the MKO, which they then further break down with peers. Very often, brief language support is solicited; or intervention in a more disputational engagement is required; or further clarification of instructions is needed. The way in which they direct different types of requests for help to the two teachers (the class CLIL teacher and the researcher/teacher assistant) shows their perception of the two teachers' skill, which in its turn, indicates strategic use of the competencies of both MKOs. The tendency appears to be to direct language related questions to the researcher (wording, synonyms, re-phrasings) while the CLIL class teacher is

often called upon to support them to create links between current and previous content, or explorations in the medium of L1. The fact that they largely identify one MKO as the language expert and the other one as the content expert is not altogether that surprising; what is essential though is that they make use of this MKO available expertise with sensitivity to the differences between the two teachers' sets of skills and knowledge.

Further, students appear to intuitively make use of a more private thinking space as well as of a shared one. In some instances there is explicit self-regulation through a more private kind of talk which indicates temporary withdrawal from the dialogic exchange in order to take in the information. Similarly, they show ability to use peers' contributions/comments/challenges as a measure of the clarity of their own contributions and thus as tools to readjust or further elaborate their own contributions.

In addition, students appear to show some understanding of the value of the explorative type of dialogic learning through the way in which they manage their group talk; for instance, particularly in those instances when groups gel well, there are explicit invites addressed to peers to verbalise what they think. Similarly, an appreciation of team work is evident in some cases where a neat round the clock allocation of turns shows a preoccupation with ensuring fair participation.

Finally, recognition of a need for a method of working out the content/task demonstrates students' awareness of the value of a systematic approach to one's learning. In some instances reaching accord on the suitability of a method does not come smoothly as different individuals characterised by varying learning styles are bound to prefer different routes to learning. In these instances, one witnesses an apparent breakdown of the group's cohesion as some members withdraw into a more personal space to work out focus of content/task in their own way. However, in those cases when students do agree on a method one can see how, at times, in the process of trialling the method, if inconsistencies arise, students question the validity of their followed method and sometimes change its course.

Certain features of the cognitive engagement characteristic of the interaction with peers have been highlighted in this section. Next, I am going to focus on the interaction with the MKO with a view to investigating how this cognitive engagement alters.

VI.2.3.2 Extending IDZ in the interaction with the MKO

The analysis in this section relies on data from instructional learning units (annexes 2 and 3), in addition to instructional episodes identified in those learning units of hybrid composition (in this case conversational units which host instructional episodes). Following from the previous section, it makes sense to look at how understanding of content, use of L2, and manipulation of learning tools compare from an almost teacher-free to a more teacher-led learning interaction.

Students' cognitive engagement remains the primary aim here, as opposed to identifying IRF patterns, for instance. More precisely, the analytic dimension accommodated in this section regards students' response to scaffolded instruction on a continuum from contingent teaching (on-the-spot-scaffolding that involves attuning into learners' contributions) to a more teacher-driven kind of scaffolding (teacher's line of reasoning in light of the expected answer drives the learning interaction). Mercer's concept of Inter-mental Development Zone (2000) stands at the heart of this section and the organisation of this section mirrors the previous one 'Emergent IDZ in the interaction with peers'. In other words, students' aided progression is looked at while receiving assistance with understanding the content, decoding/producing L2 and managing their learning actions.

VI.2.3.2.1 Aided progression with the exploration of content and task

Several scaffolding techniques are going to be related here in tight relation to students' response to them.

Enabling students to extend their schemata

The lifestyle and homes of different communities provide a great many opportunities for children to extend existing knowledge and previous understandings. For example, in an instructional unit with Y3, the teacher wants students to analyse the picture of an arctic bony-bunker, in particular its roof, undertake inductive type of analysis and to make connections in order to work out the provenance of the skeletal structure of the roof (annex 2.3B /114-137). The students throw in contributions which indicate that they

are gradually tuning into the teacher's line of thinking: large animal (115/Dani –'tusks'; 117/Dani–'large'; 119/Dani–'mammoth'; 122/Ioa–'elephant'; 132/Dani–'walruses'), polar animal (120/Cod-'polar bear'; 126/AG–'reindeer'), and arctic hunters at sea (128/Ioa-'dolphiers=dolphins'). Teacher's prompting '...think about these people's occupation...' triggers Dani's thought about the eating what they hunt (line 134). This creates the bridge that the teacher needs to make the students *arrive* at the answer without her providing a readymade answer for them. In addition, lines 136/Dani's and 137/Ioa's reactions of bewilderment at the fact that Arctic bony bunker roofs are made of whale bones show the fact that these students' schemata of houses is pushed beyond their current understanding of what could constitute materials for making a home.

Fostering higher order thinking

Instances when critical thinking is activated come from both student and MKO challenges. Besides questions that elicit information from the teacher, students sometimes pose questions that indicate deep engagement with the content at hand. For example, in an introductory lesson on the Celtic civilisation where the teacher uses a time line, one of the students raises a rather unexpected question which also leads to a critical incident (see annex 2.1B: lines 1-26). Exceptionally, this unit is scaffolded by both the class teacher who happened to be marking at the back of the room, and the CLIL history teacher. In line 16 Luci reveals the conflict created in his mind by the BC and AD designations to label (i.e. taking as point of reference the birth of Jesus). More precisely, lack of prior explanations about different systems of time division/by eras/civilisations led him to infer that the BC/AD time division is the only one used in all times across civilisations. Therefore, he cannot understand how people who lived before Christ could have used this time division. The class teacher provides a personalised example where she introduces the Jewish system of numbering years. Di tunes into the teacher's explanation about the Jewish system, after which she emits a rather judgmental statement regarding the oddity of the system (a comment which is not entirely surprising if one considers the vast white/Orthodox majority in Romania). This prompts both teachers to insist that students open up towards different cultures and ways of conceptualising the world.

Complex transfer of knowledge across topics can also be witnessed at times. One such example refers to noticing similar features between civilisations. For

example in a follow-up instructional unit on ancient China, Mrc links the concepts of conquerors=Romans to that of raiders=Mongols (see 2.2F: lines 161-162). By the phrasing 'it's like a Roman's Mongol' he aims to say that the Mongols represented for the Chinese what the Romans represented for the Celts, an invading force. Through this he shows ability to analyse features at a higher level, he departs from the concrete plane slightly and creates an association of conquerors/raiders based on some common features which is a starting point in moving towards a more abstract conceptualisation of power relations.

Allowing lateral thinking

In the majority of teacher-led activities, the scaffolding usually takes children towards the expected answer. However, at times, alternative answers are accepted which encourages students to move further afield with their evaluation of a situation or provision of a solution. In annex 2.2H, fragment 2(lines 1-68), one can witness a string of contributions all aiming to provide an answer for the question: 'If in the Middle Ages it took as long as 10-20 years to build a castle, would it take the same number of years to build a castle today?' The first idea accepted by the teacher in line 13 refers to lack of adequate materials with an implication that it would probably take longer, if it were possible to reconstruct a castle these days (see lines 2-12). Then, lack of adequate machinery (Cod/first half of line 14), after Cod changes perspective and questions the need for castles today which is further elaborated by Ag who points out that they used to serve a purpose at war time. In line 28 Mrc takes another angle on this and argues that there is a recession on and there is no money available to erect such expensive structures. From line 42 onwards the Res tries to direct students' focus towards a different perspective as well (modern equipment and machinery and materials available today would speed up the process of building a castle), scaffolding to which the first responses appear in lines 57-60 where students enumerate various elements of advanced technology available today but which becomes more articulate with Cod, AG and Adw's contributions in lines 65-67. The main gain in this instructional unit is not necessarily driving the students to arrive at 'right' or 'expected' answers (what the Res does in the second half of the unit); rather, the learning value arises more from allowing the students that freedom to provide explanations outside the parameters initially envisaged by the teacher at the lesson planning stage.

Directing focused attention to salient features

Another commonly met scenario regards a subtle directing of attention to salient points through sequences of questions in order to make the students notice the essential elements that would enable their progression towards the discovery of the expected answer. In the following example from annex 2.3A, students are presented with a quiz on life style and homes, and are allowed a few minutes to deal with a question after which whole class activity is resumed. Thus, for the question 'There was a fire going on day and night in the middle of the Celtic hut. How come the hut didn't catch fire?', There are brief conversational units from groups working in parallel, for example group 1 (3-20) and group 2 (21-38), followed by an instructional unit 2.3A (39-87). The conversational unit from group 1 shows students slightly struggling but breaking down the focus of the content by looking at key and more familiar phrases, and re-constructing meaning. Di drives the articulation of an explanation in line 17 where she proposes an explanation based on the structural soundness of a hut. The second group of students clearly struggle as they read through the question and fixate key phrases and elements in the picture but they indirectly admit that they do not have an in-depth explanation of the phenomenon. Their difficulty becomes obvious in line 32 when Mir's choice of the key phrase from the question itself in order to produce some kind of answer is met with non-verbal reactions from peers which clearly indicate admittance that they feel clueless.

What is interesting to note here, is that despite not pulling it off, they indirectly recognise that this is a superficial answer. These parallel conversational units are followed by a lengthy MKO-led gradual exploration of the answer which starts with an invite to students to throw in contributions: 44/Di (hut is structurally-sound), Tra/46 (hut is made of concrete), and St/47 & Ili/49 (hut is made of wood). The turning point comes in line 50 with Mar's realisation that this does not have to do only with the structure and layout of the house but also with factors such as 'wind'. Mar is the one in group 2 who points out in line 33 that the answer is not sufficiently in-depth and it appears that she already has her mind made up as early as line 33 that the answer is not a very straightforward one (i.e. to be picked up from the wording of the question). Throughout lines 39-49 she keeps listening to the teacher not accepting any of the contributions made by her peers, all of which have to do with the structure of the house. Thus, her hunch is reinforced and she tries an

alternative answer 'wind' which then the Res/ teacher assistant picks up (positioned closer to this group as T leads the whole class activity). From move 53 onwards Res builds on Mar's contribution to lead students to see that a thatched roof and lack of draught (no windows) made it possible to have a fire in the middle of an inhabited hut. Both MKOs step in to support students' progression but there is not sufficient evidence here to show that students' follow all of the explanations provided. Perhaps, on a pedagogical note, having allowed students that space to explain back what they understood would have rounded off this instructional unit.

Enabling students to undertake in-depth exploration of the task/content

In-depth exploration of answers as well as participation from more students is encouraged in the instructional units. In 2.2G (249/286) students are expected to discuss with the Res their answer for the following question: 'If the Silk Road had run all the way to our country in the past, would our people be any different today?' The students had a chance to think about this as part of independent group work earlier in the lesson (see for instance one group dealing with this question in annex 1R /229- 232). Although the children's independent work does produce an answer (1R/231/Dan 'yes our people today would be different') this comes just from one member and is not further-elaborated by peers. Its corresponding instructional follow-up shows the Res introducing certain prompts by which students need to guide their reasoning, one by one, so to gradually lead them towards the expected answer. Some of these hints are as follows: 251/encounters between different civilisations lead to *new ideas*, 257/ encounters between different civilisations lead to *change*, and 259/cultural changes are likely to occur. The re-phrasing of the question in L1 by the Res (*268)* is followed by a string of contributions (different writing-272/Mir; different clothes-274/Ili; 279/Lor–religion; 283/Mar-Buddhist influences). In brief, students are helped to move from a simple answer ('yes'/likelihood of people being different) to an enriched answer that dwells on an analysis of specific elements. In addition, through the MKO intervention, more students become involved and bring contributions as initially in the independent group work just the one student makes an answer proposal (Dani). Referring back to my discussion of minimal, tentative and sustained content-related argumentation in the interaction with peers (VI.2.2.2), this example shows how MKO intervention has the potential to further-extend the cognitive value of a learning interaction: 1R /229- 232 can

be classed as a conversational unit of tentative argumentation but this is then enriched in 2.2G (249/286) through sustained scaffolding.

Another example of teacher intervention in the form of an instructional episode within a conversational unit (1Q/150-180) shows the teacher helping students to overcome premature abandonment of the task on grounds of difficulty. The students only spend a few moves to try to work out the focus of the content, and what the task is asking, but they seem to experience difficulty in recognising the necessary connections in order to work out an answer. The questions wants them to work out in what way the ancient Chinese could have used a casket to achieve the effect of air conditioning. Together with the question a picture of the casket is provided. However, during their tentative exploration of the question Dan points to the picture of the 'Jade prince' which is relevant for the following question. This creates a rather complex equation as the students do not seem able to work out a connection between 'air conditioning', 'the jade Prince' and 'a metal casket'. Mir/158 explicitly asks for Res's help which triggers the instructional episode. What follows is scaffolding aimed at helping the students to work out the answer but it is done manipulating the amount and level of input so as to reach the students' level of linguistic comprehension. It starts with a language comprehension check around 'air conditioning 'by asking the students to explain the effect to which this is used (166/Dan, 168/Lor). Then the Res directs the students' attention to a couple of salient elements in 171/174/176 ('**what** could be fitted into the casket and used to cool the temperature/) through progressive rephrasing of the same ideas to allow students time to process information and produce an answer. The reaction comes in lines 178 and 179 when two of the students appear to experience a eureka moment.

Attuning into one another's train of thoughts

Perhaps, especially under conditions of whole class teaching but also in group activities, the tendency is for the teacher to drive students to attune to her line of thinking. One such example can be seen in an instructional episode (67-94) which emerges within a conversational unit (55-94) in annex 1M. The task requires students to work out why the Romans wanted to dispose of the druids to which students in this group have responded just by reading out parts of the text and the question. The actual scaffolding starts with a basic comprehension check for the phrase 'get rid' after which the prompts are introduced gradually (74/ Romans as conquerors, 76/Romans' dislike for the

Druids, 79/ qualities for which renowned, 83/ Celts as leaders, 85/Celts as important enough to constitute competition for the authority of the Romans, 87/Romans concerned with people's perception of authority). This is a substantial amount of prompting to which the reaction comes in line 90 where Dani concludes that the Romans perceive the druids as a threat because '…they were so ^^ intel ^^^…intelligent but they [Romans] want to be the most intelligent'(lines 88 & 90).

Although following the teacher's line of thinking is a more common occurrence in whole class lessons, there are instances when the reverse occurs, i.e. the teacher follows the students' contributions and expands on these with the aim of enabling them to express their intended meaning. For example, in annex 1R (lines 140-149 are of interest), the task revolves around working out where a defence wall like the Great Wall should be built in a country. The learning unit turns from a conversational unit into an instructional one simply because, of necessity, to deflate conflict between peers, the Res takes over and the instructional episode fills the exploration of the answer. What is however important here is the fact that this time the MKO does not drive the student to attune to her line of thinking (the expected answer here being North of China in order to provide protection from the Mongol raids). Rather, Dani's stream of thoughts is followed. Although the MKO signals uncertainty regarding Dani's first proposal (141/ Japan), the second proposal is fully followed and accepted (143 Beijing – because the capital's population is significantly larger than in other parts of the country).

VI.2.3.2.2 Supported L2 decoding, production and fluency

In this sub-section I shall look at students' response to those support strategies aimed mostly at extending their comprehension and production of L2.

Embedded (linguistic) scaffolding to support decoding and production stages

By embedded linguistic scaffolding I mean quick and non-disruptive L2 support from the teacher supplied to support the flow of content exploration. This comes in the form of non-verbal clues: body language, facial expressions or mime, see for example MKO and Dani scaffolding for peers 'low doorway' in a Celtic hut 2.1F (38-44); or 2.1J (excerpt 4/35-51) where MKO scaffolds strategic location of a castle through miming 'being on top of a hill'); or 2.1F

(102/effect of very cold air while breathing to amuse the children). Paralinguistic prompts are also employed (strategic pausing as invites for students to contribute and pronunciation such as reverting from a British to a more American sounding accent to ease students' understanding as this is what they are mostly exposed to). More importantly L2 is used in corroboration with these, with the aim of helping the students to access texts/tasks. Some of the strategies reflecting the idea of embedded linguistic scaffolding include:

- Repetition of students' L1 utterance in L2 as a recast to ensure exposure to the L2 version;
- Basic comprehension checks (e.g. 'architects'/147/AG 'construction mens' in 1O/139-147);
- Random comprehension checks through unlikely explanations (i.e. tempting them with silly explanations just to see if they really follow). For instance, while providing instructions/explanations students tend to be quiet or provide minimal verbal confirmation of the extent to which they actually follow. In a lesson on designing Iron Age Museum, students are given asset of fairly complex instructions on the different roles they are expected to play (museum manager, archaeologist, designer, historian). Confirmation of their understanding comes mostly in the form of a show of hands, or filling in a frame lines 39/Res …desi^^/40 'design', or brief yes/no type of answer. This is why at times unexpected/unlikely instructions are thrown at students to check their reaction (see lines 49-53/2.1D).
- Synonyms, rephrasing/repetition as well as use of Latin root L2 vocabulary similar to students' L1 with immediate reference to the Anglo-Saxon root equivalent;
- *Skeletal or structural linguistic frames* to enable the children to maintain their reasoning flow, especially at production stage.

Some of the above enumerated strategies and students' response to them can also be seen in the following example taken from annex 2.1H (lines 77-98) where the Res leads an introductory activity in which several Chinese objects are being explored. In the stretch selected here the students explore the features of a miniature vase under MKO guidance; the linguistic aim here being to model use of L2 for describing objects. Students are encouraged to throw in contributions using the language they have available (77/'these stones', 79/'diamond', 80/'the diamond') which are then followed by the MKO's recast of

the phrase 'precious stones' which denominates class and summarises children's examples (line 81). Then students' question phrased in L1 in line 82 asking whether the stones are genuine is answered in L2 with two different phrasings conveying the same meaning to maximise exposure to input for students 83/ 'they aren't real'/'they are pretend ones'. Similarly, AG's slightly odd choice of vocabulary in line 84 ('false' to describe stones) is recast with the adequate choice of vocabulary in line 85 ('fake ruby'). Then, MKO's use of AG's exact words '...these are apple tree flowers ^' reassures the student of the accuracy of his phrasing. So far the students are supported to produce contributions in the medium of L2 by almost mirroring their responses or recasting them in a semantically and grammatically adequate version. Move 89 shows an example of framing, in other words, because the students' level of proficiency in English is still limited, the MKO provides ready phrased alternatives from which children can choose: e.g. 'a simple vase' or one with 'lots of drawings'. Further, extension of students' vocabulary range is sought by seizing opportunities to introduce new words (see line 91/Rux 'it's beautiful' and the MKO's reply in 92 'it's beautiful it's very ornate...'). In the same fashion, as soon as basic comprehension of the word 'enamel' is ensured, MKO moves on to elaborate phrasing (see move 98 'see it's coated in enamel so that the vase can hold water'). This sustained attention to language is possible here because of the nature of the activity; the aim is to explore and talk about some of the features of these objects.

In the previous selected excerpt, one example of frame is given, i.e. choice of two answers to make it easy especially for those students who operate more at the receptive end rather than the productive one. This framing to which I make reference represents fairly strong support; perhaps, provision of ready phrased alternatives is the closest to actually providing the student with the actual answer. Next, a brief question can also be classed as a *frame* especially through the way in which the focus is shifted in the question (e.g. 'So what are they used for?/ Ss: ' ^^^'/ What do monks do?/ Ss: 'They sing'). In this example, the first phrasing of the question (the purpose of the Zen meditation balls) obtains no explicit reaction from students. Thus, a rephrasing is offered with a slight shift of focus, i.e. the monk's occupation. In a way, this is almost like exploring alternative routes of arriving at more or less the same answer and, in doing so, prompting through rephrasing and synonymy appears to be crucial.

Further, if one looks at these frames in terms of complexity of the structure, one can see that they can range from *a syllable of a word + strategic pausing* (e.g. 'They help you to ^^^'/ Ss: '^^^'/ 'They help you to medi ^^^'/ St: 'meditation'); to *complex grammatical and syntactic frames*. In the following example Adw is clearly making a sustained effort to retrieve the word 'warm' and also to grammatically and syntactically phrase his answer (46/ 'Aaa ^^^', 48/ '^^^ of the South is a ^^^ ve ^^^ aaa ^^^' *[intense gesturing]*, 50/ 'is a ^^^^ imm ^^^wa ^^^' *[struggling for the word 'warm']*. He changes course and goes for the more familiar word 'hot' in line 52. Then, as soon as the MKO sees the thinking behind his linguistic effort (Adw is trying to say that having doorways facing south would allow some warmth to enter the house), she provides him with a grammatical frame in line 53/ 'It's ^^^' which Adw picks up and completes the articulation of his answer proposal in line 54/ 'It's hot'. An example of a more complex frame can be seen when the MKO wants to support the students' progression with their reasoning or production of an answer. For instance, on a question revolving around the roles of pagodas in the distant past and today, the primary instructional aim is to enable the students to hold on to their line of reasoning (see annex 2.2F). In line 140/MKO provides an opening for the students 'in the past ^^^' in order to create a short cut so that students come in at the point where the essence of their idea is introduced. Mrc picks the opening frame up in line 141 and fills in 'in the past no living' (he means 'people did not use pagodas as homes as it was more common to have them as places for prayer'). Then, in order to help the student(s) maintain this line of reasoning and the flow of the discussion, the MKO provides the second part of the frame in line 142 '^^^ but nowadays...'.

Overall the students' response to the strategies presented above is a positive one, if at times intensive scaffolding is needed from both MKOs. However, one needs to acknowledge that students do not always manage to tune into the L2 explanations and reverting to L1 is needed (MKO persist with L2 mediated explanations about the significance of the Terracotta Soldiers 2.1H (209-243), but the students' minimal reaction is an indication of the MKO's failure to make this accessible to this particular group of students). Similarly, insistence on maintaining the flow in L2 can result in a loss of momentum especially if the students intend to pose complex questions/provide explanations for which they do not yet possess the nuanced meanings they need. In an introductory lesson on Celts, a Y4 boy has a relevant question but the teacher's insistence that he tries to formulate it in English almost makes him abandon the pursuit for an explanation from the MKO: 'oh forget it I give up' (Luc/line 12 annex 2.1B).

Another aspect, I would like to revisit in this section is students' emergent fluency in L2. This has been discussed in a previous section concerned with the interaction with peers and the point made regarding the occurrence of translanguaging, more precisely of conflated words. In the interaction with peers this phenomenon appears to become more frequent towards the end of the module which may be an indication of tuning into operating through the medium of English more so than at the beginning of the module for instance. As far as the interaction with the MKO is concerned, there appear to be a great deal more instances when conflated words are used which would seem to be a result of the implicit pressure to maintain the flow in L2 especially in the instructional exchanges. Some categories and examples are as follows:

- Completely made up words (2.3B/228-230 'panoia' for 'tomahawk'; 2.3D/36 'meduz' for monster which is generated by a metaphorical association the student makes with Medusa the snake goddess from the Greek mythology);
- Grammatical rule applied to the more familiar form of a word (2.2F/39 'differention' – adjective 'different' + the noun suffix '-(e/a)tion'; 2.3B/128 'dolphiers' for 'dolphins', the suffix '–iers' is applied to that part of the word the student could retrieve; 2.2H/Fragment 1/11 'binoculs' from Romanian 'binoclu'(sg) /'binocluri'(pl) but here the English plural, '**s**', is applied);
- Conflated words, i.e. Romanian words with English pronunciation (2.2F/104 'acoperit' for 'covered' ; 2.2H/Fragment 1/11 'inamic' for 'enemy' – in both cases it is the word stress and enunciation of sounds applied that makes these English sounding words);
- Conflated words, i.e. Romanian word collapsed with an English sounding suffix (2.2F/35 'tradgen' for 'tradition'; 2.1H/116 'batick' from the Romanian 'batic'=scarf + 'ck' specific to English + pronunciation 'soft **t**'; 2.1J(121) 'incoronation' from the Romanian 'încoronare' + prefix 'in-' + suffix '-ation'; 2.1K /25 'a mount' which involves dropping some of the vowel sounds from 'munte' the Romanian for 'mountain' to make it sound more English; 2.1H/121 'metese' for silk from the Romanian 'matase' again the vowel sounds are slightly muffled.

On a general note, the fact that students generate these conflated words is a clear indication of a strong drive to communicate which in its turn reveals the students' level of involvement with propositional information. As stated

elsewhere in this thesis, the fact that the phenomenon of conflating words intensifies as students progress with the module, shows increasing attuning into operating through L2. In other words it demonstrates, to a certain extent, the value of providing sufficient amount and adequate level of L2 input in relation to the students' current linguistic ability. When compared to conversational units, the instructional interactions comprise a significantly larger number of conflated words, which is fairly solid indication of the effect of the MKO's pressure on maintaining the learning interaction in the medium of the foreign language. One considerable difference is that during conversational interactions these pidginised forms remain more or less unchallenged, while within the frame of instructional episodes or units, the students are enabled to complete this progression from L1 to L2; e.g. Dan/105 'exatiation' followed by Res/106 'examp ^^' then Dan/107 'examples' (see 1R/103-107).This last point shows on a pedagogical level how important it becomes to alternate modes of learning in the classroom in order to maximise learning opportunities, or in this particular case, to achieve a reasonable balance of fluency and accuracy in the use of L2.

VI.2.3.2.3 Construing instructions and modelling work method

With regards to the metacognitive level, in the sub-section concerned with the interaction with peers, the perceived learning tools employed with predilection are peers' area of expertise as well as social relationships. In the interaction with the MKO, implicit and explicit guidance is provided regarding learning tools and how to draw on these; more precisely, support ranges from direct instructions and modelling to more subtle ways of guidance slipped in during the students' learning interactions that are meant to be non-disruptive. This is aimed at maximising students' chance to notice and utilise a variety of learning tools in their group interactions.

Some of the observations presented in this section have been possible because even during whole class directed activities at least one camera out of the two would capture the perspective of one particular group of students (in most lessons students are seated as groups). Thus it becomes possible to take a closer look at students' reaction to teacher's instructions; these reactions can range from a recast of the MKO's explanation by one peer to brief side-talk exchanges and even conversational spells.

Since this has been a CLIL module largely based on tasks, dealing with instructions passed in the medium of L2 gains a high profile in students' learning. Provision of instructions is perhaps the most obvious element of support through which it is suggested to students, from the onset, what and how they are expected to perform. In this study, even though instructions are mostly given in L2, there is an overall positive response from the students in terms of understanding and planning the course of their learning actions. For instance, in a lesson on creating an Iron Age Celtic Museum, students are expected to work in groups of 4 with each student then playing a different role within their group. Setting the task in this particular introductory unit takes 13'57'' and 108 lines (annex 2.1D). One can see how roles (museum manager, designer, historian and archaeologist) are introduced one by one, with instructions around each role being carefully scaffolded through numerous comprehension checks. In the same way in which the MKO guides students to discover aspects of content, for instance, the instructions are not simply handed over to students; rather, the particulars of the task are worked out by students with the MKO's help. This is due in part to the need to check comprehension (which would class as a specific feature of any L2 mediated approach), but it is also due to a deliberate pedagogical decision to involve students and thus make them active agents in their own learning (enhance autonomy). In move 7 the Res introduces the overall task for the lesson 'today's activity is around a museum we are going to be organising a museum', after which she encourages the students to construe the meaning of different elements in the task such as name of the museum ('What kind of museum would students be likely to be looking at in the context of the previous lesson on Iron Age Celts'), expertise needed to create a museum (the different roles), and the exact jobs each of these roles would cover in a team work situation. All of these are introduced to students by leading them through questions and having them think about what would make sense rather than providing directives.

In the frame of instructional units, due to whole class teaching constraints, there is a tendency for the students to provide brief comprehension confirmations in response to the teacher's instructions (See 2.1E/1-20/ impact of instructions on group 1, where 11 lines out of a total of 20 come in the form of 'yes' answers and nodding). However, at times one may witness conversational spells in which students discuss their understanding of the task instructions. An illustration of this can be seen in annex 2.1G in which the

Res' instructions on creating a pictogram story (87 and second half of line 89), is followed by a conversational spell (90-96) triggered by Cod's (line 90) request for clarification, and in which students recast the MKO's instructions according to their individual understanding. This kind of scenario, in which students recast the teacher's explanations by breaking them down for other peers, I identify as *cascade type of scaffolding*, i.e. joint teacher/student scaffolding in that the more able students or those better attuned at any particular time, filter down the MKO's explanations and make them available to other peers.

The simplest kind of cascade scaffolding comes in the form of one ripple (one explanation from one of the peers directed at colleagues and usually providing a straightforward translation of the MKO's advice (see move 200/Tud 'She says **to talk** about the question' which mirrors the MKO's advice to discuss alternative answers annex 1L/197/Res). Another similar example, shows one year four by reinforcing MKO's suggestion to change their method of work from reading aloud to silent reading (see lines 228/ Res, and then Alx's reaction in line 230 - annex 1Q).

A better sustained kind of cascade scaffolding, which on a metaphorical level could be likened to wave propagation or a ripple effect, becomes significantly more prominent in instructional units especially in those teacher-led sections when complex tasks are explained to students. One such example can be seen in annex 2.1A/16-31. The actions of three members of a group are interesting to follow here (Tud carries on sorting and sticking pictures on the timeline without taking notice of the MKO's instructions while Mrc and Eli make constant attempts to help him to tune in). In move 16 the MKO tries to grab all children's attention *('*Now children sit down **^^^** *[in a raised voice]* one two three eyes on me ^^ sit down sit down'), but line 17 shows Tud taking no notice of MKO's instructions. Then, line 18 shows Mrc tapping Tud gently and repeating the Res's exact phrase with an emphasis in order to make Tud take notice of the change of course in the overall class activity, i.e. that they were supposed to stop for a minute what they were doing as a group and listen to further instructions ('There is no need for that now listen **one two three eyes on me'**). In spite of clear instructions that students are to discuss the arrangement of the pictures before moving on to stick them, Tud ignores this and carries on (evidence being move 26). Another peer Eli, in move 27, joins efforts with Mrc in attempting to bring Tud back on track as she stretches over the desk and pushes his glue away suggesting not to rush but to listen to the Res'

instructions. Then, Res's reiteration that students are expected to discuss pictures before moving on to stick them in move 28, is explicitly cascaded by Eli who reinforces this especially for Tud in line 29 ('Will you listen we are not supposed to stick them') and line 31 ('…we have to talk about it beforehand'). In this particular example, Mrc's and Eli's interventions serve two functions: primarily, they are persuasive moves as they are trying to reason with Tud to attune himself into the group activity, but indirectly they constitute a breaking down of the Res' instructions for Tud, especially through Mrc's repetition with added emphasis of the MKO's exact words and through Eli's L1 mediated repetition of the main point of the instructions.

In annex 2.1E(1-22), if one follows the impact of the Res's instructions on group 2, one notices this propagation effect, i.e. the way in which instructions are taken on board gradually as demonstrated by the children's renditions of their understanding of these instructions. In this example, the Res introduces the idea of following sequences on a storyboard and attached questions for a lesson on Celts. Two of the MKO's interventions are particularly long and complex (lines 7 and 17). However, students do not wait in silence until the Res finishes to providing instructions rather, in a gradual fashion within their group, they begin to reconstruct these instructions through contributions from most members of the group. Following lines 7 through to line 14 inclusively, one can see how in three moves (10, 12 &14) almost instantly in reaction to the Res's instructions, Mar clarifies for peers the relevant pictures for sequence 1 on the storyboard. Next, in line 17 the Res sends out a great deal of information to students, more specifically she flags up certain aspects regarding those aspects that she wants them to consider while engaging with the task (collaborative work, decisions based on discussion, maintenance of a balance between reading and listening, solving of each question in turn, coordination of sequences on the poster with the questions on quiz sheet). Lines 18, 19 and 20 show fairly good coordination in reconstructing The Res's complex instructions: Mar/18 draws peers' attention to coordinating the storyboard with the question sheet, Mir/19 clarifies for peers that the reading of the text should come first, and finally Tud/20 summarises ('hold on') the main aspects regarding their method of work: materials need to be used in conjunction and stepped progression through the sequences on the storyboard.

Besides provision of instructions, modelling of method of work is also important to note here. Features of the group work approach the MKO

encourages students to use appear, at times quite explicitly, in the provided instructions (e.g. work collaboratively and make decisions based on discussion). Generally, students follow these suggestions with varying degrees of success, but, at times, intervention from the MKO is needed to model use of materials and manipulation of information. For instance, the conversational unit 1H/30-48 is without doubt students' own unaided work linguistically and conceptually (this unit has been discussed earlier under peer-sustained interaction/collaborative meaning making). However, if one traces back the MKO's intervention, i.e. the instructional episode (17-29) that precedes this conversational unit, one can see that the Res briefly models for students the way in which they are supposed to make use of the materials and how they need to direct their attention to key information in both picture and text. Thus, it can be said that the help the students receive here is one of a metacognitive nature through which the MKO, indirectly, wants to increase their awareness of the stages and processes in their own learning.

In the same line, guidance to explore materials carefully in order to draw information and work out meaning can be seen in 1O (110-127) where the Res is helping students to focus better, i.e. to see, notice and make connections based on analysing two pictures (line 118/ '...look closely...'). Similarly, a balanced exploration of all available tools is suggested to students, at times. One extreme is when they ignore the text altogether and start speculating without any exploration of the information from the text (e.g. 1J/190&191). The other extreme is when students undertake a purely text-dominated, reading-comprehension approach and resume their work of looking for key phrases. For example, the Res's intervention, '...what do you think the answer is and why do you think the answer is the one you choose...', in annex 1L/221, prompts students to switch from a text-comprehension based approach to a more explorative one; evidence being the students' conversation (220-230) where they engage in hypothesizing. Thus, here it could be argued that through this CLIL model students were not told what to think; rather, when possible, alternative ways of going about thinking were modelled to them.

With regards to the management of learning one main aspect has been highlighted here, namely the intricate bond that is created between the MKO and novice learners in the course of scaffolding. One specific type of scaffolding I have identified here is cascaded scaffolding through which the MKO's instructions are picked up and decoded by the more attuned students

who, in their turn, further decode these and make them accessible to those students who find themselves in more need of assistance at any one point. In addition to this, I have shown how the MKO's modelling of work method impacts on the quality of students' conceptual and linguistic work.

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As a coda, I would note that although instructional interaction does support overall cognitive extension, it does not mean to say that all of our interventions have been successful. Untimely or poorly pitched scaffolding brings confusion or premature closure to a learning interaction. For example, two problems can be observed in CLU/114-138 generated around question 6 in the storyboard task on Celts (annex 1J): a monitoring mistake and an ill phrased instruction. In this particular CLU the students explore the notion of gift offering towards gods in the Celtic culture. More precisely, the task around which this CLU is generated is to work out what a Celt would offer Sabrina, the goddess of water: transaction 1(114-121: negotiation of main message/focus of text and question), and transaction 2 (112-125: answer proposal for question 6). Transaction 1 is clearly conversational whilst transaction 2 is nearly hijacked by the Res who was monitoring the groups' independent work. This CLU is a good example that not all instructional interventions are useful, however tempting it may be to intervene, especially if the teacher monitors several groups, it is difficult to be certain at what stage in the students' conversation you can fruitfully intervene. As can be seen from the text provided in the annex, my intervention in this particular example is more a disruption than help as Cdr already articulates his answer proposal in move 122 and adds justification in move 125. The second mistake, in the same conversational unit, refers to ambiguous instructions on the teacher's part in (1J/138/'...go on move on then') which makes students abandon their discussion on question 6 and move on to question 7, because the Res did not make it sufficiently clear that she meant for students to carry on thinking about why the Celts would throw weapons in the water (in order to please the Gods and gain access).

As with the interaction with peers, in this section on the interaction with the MKO three main aspects are looked at: students' progression with their work on thinking about the content, students' L2 performance, and, finally, students' progression with their work on thinking about the method of learning, all of which are analysed with particular reference to the impact of implicit and explicit scaffolding conditions.

VI.3 THE LEARNING INTERACTION WITH THE TASK

In the sections focused on the interaction with the peers and the MKO the substance of the learning interaction has been explored from three perspectives: depth of engagement with the content, L2 decoding and production, and management of learning. In order to obtain a holistic picture of the students' learning experience within this particular CLIL model, it becomes fundamental to add another perspective, i.e. students' interaction with the task. Therefore, in this final section, I shall undertake a close-up study of the thinking exercise which students undertake during the interaction with the task; more specifically the employed strategies and the underlying knowledge activated for accessing an L2 mediated learning space. To complement the previous sections, on a continuum from a socially shared to a more individual learning space, the analysis in this section is informed more by the latter. In other words, if the analysis in the interaction with others draws on the learning interaction from the conversational and instructional units/episodes, in this section it is the reflective units that come to the fore.

VI.3.1 Underlying strategies and types of Knowledge activated

It needs to be reiterated at this point, that interviews (from a research perspective) or follow up activities (from a pedagogical perspective) became, as we progressed with our module, an extension of the class based activities to give students a chance to extend their reflection on their learning. The research gain from this is that the cognitive engagement observable during the classroom–based interactions could be discussed (stimulated recall), when possible, and also further explored with individual students. The more relevant part from the follow- up activities is the work undertaken around set mini-tasks which mirror and extend tasks from class, and the discussion based on these. In other words, the metacognitive accounts of classroom-based learning experience have been used to make inferences and round off the analysis of the interaction with others. Here, the mini-tasks (text and/or lecturette), and the immediate reflection based on these are of immediate relevance.

Thus, the discourse processing strategies which students employ to infer meaning are followed here by relying on students' accounts and my own observations. The protocol becomes flexible in that the discussion and

clarifications emerge around what the children explain about their own learning experience, and so the questions may vary from case to case. However, the questions and the probes are largely as follows:

- *What do you think this is about?*
- *How did you work it out?*
- *Could you describe for me what you were doing in order to understand this?*
- *What were you doing just now to try and understand what this is all about?*
- *What made you think about this / in this way?*
- *You are saying this has helped you. Can you explain more about this please? How exactly/ In what way did this phrase/ detail in the picture help you?*
- *I have noticed you were looking through the text/ picture/ materials...what were you trying to find/ what were you hoping to find?*
- *What do you mean I was thinking hard? What exactly were you doing?*
- *You are saying you were making associations can you give me an example?*

With recognition of some overlapping in terms of types of knowledge underlying students' strategies, for clarity, the reported strategies are divided into three broad knowledge areas. The Personal Knowledge section comprises strategies that revolve around higher order thinking activity underlying work on deep understanding. The Linguistic and Discourse Knowledge area comprises the language-oriented and the genre-informed strategies students employ to infer meaning. Finally, the Procedural Knowledge consists of strategies which refer to the management of information, learning tools and method.

As illustrated and argued elsewhere (Hawker 2013:159-180), learning under this approach stimulates activation of various types of knowledge through the strategies students employ. In the same fashion with previous sections, of necessity, main categories are going to be illustrated and only a few representative examples are going to be discussed in detail.

VI.3.1.1 Personal & shared knowledge

Mostly underpinned by common sense, general and topical knowledge, the strategies identified here are based on data collected during students' working on deep understanding. In the sections on the interaction with others some higher order thinking processes have been noted, some of which are: drawing analogies, hypothesising, plausibility checks, and schemata activation and extension. Within the context of reflective units, students' learning actions

and accounts also indicate an increased incidence of higher order thinking activity, and are going to be described under two main categories here: matching incoming information against existing knowledge structures and seeking to extend existing knowledge structures which resonate with Piaget's notions of assimilation and accommodation, respectively.

Matching incoming information against existing knowledge structures

The following thinking processes are reported and/or noted to occur with predilection in students' work on accessing an L2 mediated space.

- *Making analogies*

Comparing, contrasting and extending features from familiar to less familiar contexts are noticeable especially when students are introduced to new concepts. For instance, in the lessons on medieval castles, the students are introduced to the idea of a typical European medieval castle and its most common features are explored (mottes/earthen mound with a flat top, curtain walls, water-filled moats, etc.). In one of the follow-up activities, a Y3 boy draws on his experience of having visited a fortress/museum, and extrapolates from this to work out the role of the cross-shaped windows he sees in the picture of a castle he is presented with in the interview. He remembers that the Romanian fortresses needed that space for canons and deduces that these narrow windows in the walls in any of these old castles or fortresses must be for guns. Then he considers the historic era briefly (as the fortress he visited is a late 1700 one and therefore canons were available), and concludes that the cross-shaped windows must have been for bows and arrows as these were available in Medieval times [Dancreolin interview 2/p.2]. Similarly, a year 3 girl ponders over the function of a pagoda and she notices that so many features of the pagoda resemble the more generic features of a shelter and infers from here that a pagoda tower must have functioned as a shelter for people [Ioa/ interview 3].

- *Inferences*

Simple straightforward inferences based on a one step deduction are also very common in students' work on accessing the L2 mediated information. These inferences stem from observations students make based on evidence from materials (texts or pictures) but also drawing on familiar concepts and contexts. For instance, a Y4 girl, while inspecting the picture of an American

Indian shaman crawling out of a sweat-lodge infers the following: *'it was very hot and therefore there must have been only very few trees there'* [Lor, interview 2]. In another interview, a year 4 boy, analyses the picture with the arctic seal hunter and makes the following deductions: the position of the man's arms is an indication that he is hunting, and the amount of snow surrounding him is a clue that the location is the North Pole, and therefore the hunted animal must be a polar bear [Drg, interview 2].

- *Plausibility checks*

These feature heavily in students' working on deep understanding and are undertaken against established schema. In other words, whole scenarios are checked against what students regard as logically plausible, and/or against topic background, and /or against their experience.

One such example from a Y4 student involves, more specifically, deducting against commonsense. The student is looking at a text-based comprehension task where she is presented with an explanation about the role of a sweat lodge for an American Indian community. Initially the student assumes this is an ordinary house but after closer inspection of some details picked up from the picture (man crawling out through a fairly low doorway) and text (the words 'spirit' and 'sweat'), she projects these against what she holds as plausible. The student then voices the proposition that the American Indians in the picture could not have lived under those conditions as they would have suffocated had they stayed inside the lodge for too long, therefore, they must have been coming to this "little house" for a special encounter such as to talk to the spirits [AnM, interview2].

Other examples show students evaluating the scenarios against the general knowledge they possess. In the activities meant as a follow-up for the arctic world lessons, more specifically in the mini-task based on the seal hunter, the students can be seen working out what the man appears to be hunting by eliminating those most unlikely animals for the arctic environment *'couldn't have been a lion'* [Octv/Rux, interview 1]; or by summoning prior knowledge on arctic animals *'what animals can exists there'* [CodLily, interview]*;* or by adding up the known elements *'man wearing warm clothes plus so much snow looks like the North Pole'* [Ioa, interview 3].

Students often employ topical knowledge acquired in previous CLIL lessons in order to assess the plausibility of new scenarios. Many students openly admit

that the guessing game is much easier if undertaken against some topic background information from previous lessons. According to them, this provides some guidance as to how far they can take their inferences so as not to depart too much from the message they are decoding [Codlily, interview 2]. Students also explain that they often decide whether the utterances they extract or try to re-construct make sense by holding them against the topic information in the lesson. This leads to an interesting fact, i.e. a tendency for corroborating bottom-up with top-down processing [Y3 students: TudRud, Ioa, Ada, Rux and Y 4 students: Lor, Ili]. For example, Lor says that with 'the story in the lesson' placed in a broader context, even if only just few sentences are understood she still manages to work out the overall message [Lor, interview 1]. More evidence on top-down processing being almost foregrounded in students' work on understanding comes from a year 3 boy. Although he inspected the text several times and admits to noticing the word 'seal', the arctic features present in the picture and his strong link between the North Pole and the polar bear as the most representative animal, somewhat override the noticing of the word 'seal' and determine him to deduce that the man in the picture is a polar bear hunter [Octv, interview 1].

In addition, students also draw on personal experience or hands-on learning experiences to evaluate newly encountered scenarios. Knowledge gained during school or family trips to museums, fortresses or libraries are summoned to boost that element of familiarity they need to progress with the exploration of the unknown elements. For example a year 3 student explains that during the lessons on castles she tried to bring into her mind impressions from a family trip to Stephan the Great's castle in Suceava/Romania in order to better understand the content in the CLIL lesson [Ada, interview 3] on castles. Another student explains trying to bring back information from a visit to a history museum in Vienna, and more difficult language from harder readings set by his mother at home [AG, interview 3].

- *Activating mental models*

Activating mental models as an optimal mind set to process L2 discourse is another phenomenon that is reported by students. Many students report that once the incoming flow of L2 information starts a more or less consciously controlled phenomenon happens, they step onto an imaginary space where the relevant mental models are summoned in an attempt to create a micro-universe from within which to start evaluating and incorporating the new

elements. In other words, be it general or topical knowledge, students seem to fall back on available mental models in what appears to be a search for familiar ground from where they feel they can start decoding new scenarios. For instance, a Y 3 girl asked to provide a rendition of her understanding of an explanation like a mini-lecturette on Sioux tribe lifestyle, reports that she activates her mental model of indigenous/ primitive communities 'I was concentrating hard to understand but I was imagining this Indian community and what they look like and what they do from the lesson and I was actually explaining to you what I was imagining' [Ioa, interview 2]. Another Y3 student reveals accessing her mental representation of winter conditions in order to come closer to imagining the harsh conditions of an environment such as the North Pole. She talks about recreating not just images in her head but also sensations as she thinks this would to set her in a mood that would enable her to better guess the message of the text/lecturette [Ada, interview 1].

Seeking to extend existing knowledge structures

This category describes strategies through which students appear to take a step further with their knowledge building, in that they seek to reshape the existing mental models in the light of new incoming information.

Experiencing cognitive conflicts is what takes students beyond activation to a revision of mental models. Such conflicts occur usually due to a mismatch between the newly encountered information and already existing schema. One Y3 boy is in the position to revise his idea of the fierce Chinese guardian dragons when the text (the guardian dragon awakening the ancestors over serious family business in Mulan) and the picture (depicting Wushu a caricature dragon) clash for him. Because he is unfamiliar with the Disney practice of reinventing classic concepts by putting on a humorous spin, initially, the student cannot make sense of the situation and comments with a certain degree of bewilderment and frustration "How could such a joke of a dragon have done such amazing things?! In what sort of world would anything like this happen?"[CodLily, interview 3]. Another Y3 student reports that what made it hard to guess the phrase 'raw meat' was the fact that he "did not expect it to be possible to eat uncooked meat". Thus the student concentrates on guesses tightly linked to his schemata (boiled, fried, diced meat for human consumption), and only after noticing the words 'vitamins' and 'destroy' he tentatively creates a comparison with the consumption of raw vegetables for

high levels of vitamins which leads him on to accepting the possibility that the Inuit boy in the picture may be consuming uncooked meat as a healthy option [Vld, interview 2].

Students report attempts to empathise with the newly encountered situation, i.e. adopt a perspective other than their own. AG displays a noteworthy reaction to a picture of a young Siberian boy eating raw meat:

> Res: 'You are saying you select some words and put them together but how do you know that in doing so you obtain the idea you need?'
>
> AG: 'I am trying to think about those words from different points of view.'
>
> Res: 'Can you explain to me one of these points of view you use?'
>
> AG: 'Like ^ look *[points to a picture in materials available on the desk]* I am asking myself if I were to live like this boy *[Nenet boy in Siberia]* and it's so cold and maybe not much food but this raw meat and I need the vitamins to be strong ^^^ maybe I would consider eating it.' [Annex 4A/109-112, interview 1]

Further, a few students describe an almost hypothetical empathy exercise on a fairly abstract level. In the previous example, perhaps harshness of the winter conditions may strike a chord with AG and thus he finds some familiar ground to start from in imagining what it would be like to eat nourishing food and how this would make one reconsider previous principles or eating habits.

Somewhat similar is the following example '*This is just like a history lesson in England so if I were a student there what would this be about?* [Tud, interview 1]. Here the student uses his experience as a student with some experience of participating in history lessons and uses this as a familiar start point. These two extracts reveal an empathising kind of exercise as a strategy to create a mindset that would enhance understanding of new conditions and people. In the following example, however, this exercise becomes even more abstract. AG reveals the following approach he sometimes uses for trying to understand new L2 vocabulary, especially when there are not enough familiar words as co-text to help him.

> AG: 'or I was asking myself if I were English what would all these words mean? if I were thinking to invent a new word in English similar to the *[unknown]* word I am looking at what meaning would I give it?' [Annex 4B/36, interview 2]

Besides applying knowledge and strategies of the kinds described above, most rewarding in any learning experience, is an indication of emergent lateral and

critical thinking. In an interview following a lesson on The Boston Tea Party where the MKO emphasizes the tensed and uneven relation between the indigenous American population and the new settlers, a Y4 student comments:

> Res: 'Based on the class lesson how would you describe this relationship between the conquerors and the indigenous population?'
>
> Tud: 'I describe it as a good relationship'
>
> Res: '...between the settlers and the indigenous population?'
>
> Tud: 'Yes because if the indigenous population want them [the settlers] to be there is good a good friendly relationship... if not it's bad' [Tud, interview 4]

This Y4 boy's confident critical interpretation of the lesson material points towards the great benefit of granting students the right to free thinking, which is so powerfully summed up by another Y4 student: 'Is it really ok for me to say it ^^ what I really think ^^^ even if it's not like in the book?' [Lor, interview 4].

The students' processing work described in this section shows the incipient stages of knowledge transforming, more precisely the way in which incoming L2 input is received, decoded, and further elaborated. Students weave into the incoming text their own contributions thus creating, at times, real narratives to compensate for what they do not understand. All this incoming information turns into personal Knowledge through added layers of subjective interpretation in the light of knowledge they possess and choose to activate.

In summary, the strategies outlined in this section reveal a great deal of higher order thinking, and activation of schema and mental models, which echo the top-down type of processing proposed under the information processing strand. The strategies under 'matching incoming information against existing knowledge structures' are reminiscent of what Piaget describes as assimilation whereby students take in new information and incorporate it into their existing schemas, whereas the strategies grouped under 'seeking to extend existing knowledge structures' reflect the concept of accommodation whereby students' existing schemas, are altered as a result of new information or new experiences. This sustained revision of knowledge structures and beliefs can lead to enhanced criticality which, one can safely argue, is essential in the education of any individual.

VI.3.1.2 Linguistic and discourse knowledge

While the linguistic operations seem to be very much about taking the L2 they can manage into a comfort zone from where they start to expand gradually with a preoccupation for maintaining control in the course of further elaboration of L2 utterances, the discourse informed strategies show that the students' comprehension work also draws on their knowledge of genre features.

Students' linguistic activity displays progression through the following stages:

- Deconstructing & analysing L2 text (which refers to extracting from text those familiar features and thus creating a space where they can operate at a manageable level);
- Reconstructing & trialling L2 text (which normally follows from the previous phase and where students are still working with small linguistic units (words, phrases, clauses) and testing meaning, aiming to strike a balance in terms of achieving a satisfactory meaningful utterance); and
- Expanding & experimenting L2 text (which involves larger units, usually sentences, where students develop versions, experiment with the usage of the language and finally try to making it their own).

An account from a Y3 girl illustrates the above abstracted stages and emphasizes the progression from identifying familiar linguistic ground to trialling new phrases and finally, to experimenting with the use of newly formed structures:

> 'I knew certain words I mean the English words were printing themselves on a page in my head, those words coming towards me from you and I somehow I was reading them and took those words I knew and tried to make up a sentence a little one with those words I was sure of, and then to add some new words, one at a time to see how it sits with my sentence and I kept at it until it made sense.' [Rux, interview 2]

The strategies employed in the initial analysis stage seem to draw a great deal on phonological and grammatical knowledge. Students report making inferences based on grammatical features they can recognise. For instance, in a text processing task, a Y4 student identifies the word 'herdsmen' as a key word for the understanding of the text but whilst mastering the word 'men' she has no understanding of the word 'herd'. She assumes that it is a type of

man or an occupation as the word 'herd' modifies the word 'men': 'it's like an adjective, you put it before the noun so it must be describing the men or their occupation'.

A similar example shows another Y4 student (Mar) identifying the word 'reindeer' as possibly one of the main concepts in the text because she notices more descriptive elements clustered around it by comparison to other nouns in the text. She also picks on the phrase '*because they have heat exchangers'* as one of the key phrases in relation to the topic of the text (reindeers) not because she knows what 'heat exchangers' translate to in Romanian but because of the known verb 'have' and the familiar grammatical structure 'subject-possesses-quality'. This has helped her establish that the phrase 'heat exchangers' describes, integrates information about 'reindeers' and the fact that so much is said about 'reindeers' the whole cluster must be indicative of high relevance information in the text.

In addition, there is awareness of the different functions of the vocabulary items at their disposal. One student articulates a working method based on networking a wide array of vocabulary items: "some familiar words" (active vocabulary), "the main words of the text" (topic related concepts), and "words that show you about how the text is made up" (cohesive devices) to which he then adds "secondary words" (vaguely recognisable words) [AG, Y3].

Some students report reliance on syntactic knowledge during the trialling stage. They seem to derive a familiar syntactic frame which they use as a decoding and trialling tool while exploring the vaguely recognisable or the unknown words.

> 'I placed those words I know one after another I sort of glued them together made them into a frame then I would take one new word and put it in [the frame] and see if this word begins to make more sense if it didn't then I'd try other words' [Adw, interview 1].

The higher order thinking activity appears to intensify during the trialling and the expansion stages. This is where linguistic sign and meaning come together as these students' semantic work shows. Linguistic operations are constantly woven with plausibility checks, i.e. students' linguistic work is not governed by an unquestioning application of rules, rather it seems to be very much about seeking to gain a reasonable level of control over meaning. One Y3 student explains:

> 'I picked up some key words from what you were saying [*lecturette*] and looked how they could be possibly logically connected and while I do this in

> my mind is beginning to form an image, then, I compare this image in my head with the sentence I am trying to make ^^^ a bit like in Maths I added 'meat' + 'raw' + 'cooking' and ended up with a little text but then I add up more or take off some depending on how it fits with the picture in my head' [Ada, interview 2].

Noteworthy is that the more surface oriented linguistic operations do not occur in isolation from higher order thinking processes such as plausibility checks and hypothesizing. Particularly, the trialling stage shows students working possible permutations of words, grammatical markers and syntactic structures almost in a mathematical fashion until these begin to make semantic sense. As also shown in the previous sub-section, there appears to be a preference for a corroboration of bottom-up and top-down processing in the work of these students, which demonstrates, on an empirical level, the strong bond between form and meaning.

With regards to the discourse informed strategies, not surprisingly, as primary students, they seem to draw a great deal on features of the narrative genre (conventions, text organisation and coherence). For instance, based on a set of jumbled labelled pictograms the students are invited to create a coherent text about the daily life of an American Indian community. Many Y4 students report making sense of the jumbled labelled pictures by choosing as a main focus a narrative line and then developing a story from there, other students explain they tend to establish casual relations by pairing up pictograms as a starting point in making sense, whereas other students start the meaning making process from contouring characters around which they then cluster symbols denoting actions and places.

In many instances the genre knowledge is inherent in the students' learning actions in a very subtle way. For instance, the example provided under linguistic knowledge (Mar/Y4) seems to be only about grammatical knowledge. Nevertheless, on closer inspection one notices that the student's decision is also, and equally importantly, based on her knowledge of the academic genre, i.e. she works with a very concise factual text, and assumes that a significant amount of detail can only be about the main concept. Similarly, students work on comprehension with certain expectations from the instructional discourse. Many students report an underlying assumption that the teacher generated input comprises inbuilt support, i.e. the more special features in the teacher's talk (added emphasis), or in the materials and task provided (italicised writing, pop-up windows) are not random features, and they must contain some helpful clues.

In brief, whereas discourse knowledge appears to be embodied in expectations and assumptions, the linguistic work illustrates the bond between form and meaning, thus, ascertaining the fact that the CLIL learning experience is fundamentally predicated on linguistic and conceptual unity.

VI.3.1.3 Procedural knowledge

Overall, this regards the management of information, learning tools and strategy. The strategies grouped here reveal students using and elaborating information management tools with the aim of inferring meaning. Some of the strategies students describe revolve around purely manipulating and organising incoming information from available learning tools:

- Corroborating information in a cumulative fashion (e.g. Searching both picture and text for helpful clues without any intended weighting on one or the other);
- Exploiting information in a compensatory manner (e.g. Inspecting the accompanying picture for descriptive details that would add to the understanding of the written text; conversely, working out the narrative thread of the text in order to be able to understand the more ambiguous elements from the accompanying picture);
- Selecting/matching information in order to identify higher relevance information (e.g. Searching for connections between details in the picture and phrases from the text *or* matching some of the incoming input from teacher talk with phrases from the written text under an expectation that the matching or repeated information is indicative of the more salient points); and
- Applying structure on selected information (with a preference for dichotomies and sequences).

Another procedural strategy involves, what seems to be, an internalisation or usage of already internalised learning tools. A considerable number of respondents report "writing in their heads on imaginary blank sheets, creating mental posters with both written form of words and attached pictures, motion

picture with attached subtitles, and internal dialogue with oneself in L1"[Y3&4]. One aspect of interest is that whilst all these are actions undertaken on a mental plane, what they actually describe are learning actions which seem to be modelled after class-based activities students may have been exposed to. Thus, whereas creating a poster is a common everyday class activity, under this scenario, it becomes the manipulation of an internal tool which students reportedly use to manage their attention: "with the poster up on the wall" in their heads, pictures and words ready for internal visualisation, they are able to direct some of their attention to more incoming information [Ada, Y3].

On a metacognitive level, students appear to display awareness of the need for efficiently managing the use of their strategies, i.e. to combine and evaluate their methods. Thus, students report combining methods which in general consist of selected text elements (familiar word forms) + co-text details (recognisable visual representations & familiar concepts) + mental L1 translation; or, repeated silent readings in L2 + tuning into teacher support.

In addition, and more interestingly, students report on-going evaluations of the appropriacy and efficiency of the employed methods with a view to adjusting them for an optimal understanding of the content. One such example comes from a Y4 girl who is introduced to the concept of 'siege' for the first time (if against the class-based lesson on Castles but with no prior understanding of the concept in L1). The student's initial guess is that 'siege' is a nationality after which during approximately three minutes of scaffolding cycles she moves on to a second guess "this seems to have to do with the walls", then, a third guess "a system of defence", with her final guess being "this is about people attacking and people under attack". Procedurally of interest is that in parallel with her progression of content understanding she assesses the efficiency of the method she uses every time the teacher offers feedback indicative of more work needed for a more satisfactory understanding. Thus, each time she alters her method as follows: initially, she relies on what she thought was the overall message in the picture, then, for her second guess she concentrates on the details in the picture, the third attempt is based on a shift from the descriptive details in the picture to what was happening and who was involved, and, finally, she explains experiencing the insight that 'siege' is not about a phrase or an element in the picture, but it is an overall message coming from both, and that she needs a more holistic approach for her induction.

In summary, the strategies outlined above show a constant manipulation of learning tools in the pursuit of meaning making. Much of this procedural work seems to be related to maintaining own control over learning actions wherein focusing and directing attention comes high. Whilst the students in this study generally report creative and rather effective manipulation of tools, it also has to be mentioned that, at times, they appear to experience an overload, especially if activities are not carefully pitched.

***

Based on evidence presented in this section, it could be argued that the CLIL approach pursued in this study seems to bring to life a learning path where manipulation of different types of Knowledge in order to access and operate in the L2 mediated learning space is central. Activation of personal and shared knowledge indicate higher order thinking processing while activation of procedural knowledge reveals the emergence of a strategic type of competence, both of which can constitute a starting point in the discussion over the relevance of this learning approach across the curriculum.

VII: SUMMARY of the FINDINGS and IMPLICATIONS

This final chapter summarises the outcomes of this exploration of the CLIL learning experience, and aims to foreground those findings that bear implications for CLIL pedagogy and for the L2 mediated learning. In addition to this, I shall also make explicit some of the accepted limitations associated with the development of this piece of research.

VII.1 SUMMARY OF THE FINDINGS

Overall, the study has met the aims proposed in the opening of this thesis (I.2), which are then restated in section (IV.1.3). It does so by sliding from providing a bird's eye view of the learning interactive patterns to close-ups of learning instances that uncover the thinking generated in the CLIL type of learning encounters. As the analysis has developed, those more relevant directions have been pursued in-depth and other, possibly too ambitious, initial plans have been left in the background. For this reason, a detailed presentation of both proposed and fulfilled aims is needed at this stage:

- To tailor a multilayered microanalysis in order to uncover the shape of the CLIL learning discourse

To this purpose, an analytical framework and detailed analytical tools have been elaborated in chapter 5. Then, *a generic interactive-dialogic analysis unit* (ILU) has been proposed, with *three specific analytic units* (see section VI.1.3): *conversational* (CLU), *instructional* (ILU) and *reflective*. In addition, *units of hybrid composition* have been documented; predominantly, conversational units comprising *instructional episodes,* and instructional units comprising *conversational spells*.

- To look at the structure of learning units, i.e. illustrate how learning interaction is conceptualised here in terms of length, complexity and purpose from broader activities/tasks down to specific units

The activity/task set by the teacher can generate several interactive learning units either conversational, instructional, reflective or of hybrid composition, and in which students are following a formally set task (e.g. Arrange chronologically pictures representing historic events on a time line – task prepared and set by the teacher and aimed at approximately 15 minutes).

An interactive learning unit can be either conversational, instructional, reflective or of hybrid composition, in which students break down the task in subsumed aims.

A conversational unit, which as far as learning patterns are concerned, stands at the heart of this study, usually comprises several transactions. Following the example provided above, students break down the task of chronologically arranging the pictures in three subsumed aims – first they aim to discuss the past end of the arrow after which they set another goal to decide on the present top of the arrow, and then they concentrate on the middle range of the arrow. As a result of these aims identified and mutually agreed by the students, 3 conversational units are generated.

A conversational transaction is the core component of a conversational unit and it usually consists of exchanges with a tight focus usually on a negotiation involving a content-related aspect. Again following the same example, in a conversational unit focused on the past end of the arrow a several transactions are formed each being generated around the negotiation of one item (e.g. a negotiation around deciding where to place 'an ancient coin' on the time arrow –see transaction 3/moves 16-18 or, another negotiation about where to place the 'mammoth' –see Transaction 5/moves 25-37 both in Annex 1E).

An overall template of a conversational unit can be inferred, mostly in terms of its component elements: Group organisation // Exploration and negotiation of content and/or task focus // Exploration and negotiations around understanding/interpretation of content // Meaning and/or form based linguistic work on comprehension // Argumentation based exchanges (answer proposals, challenges, and justifications) // Instructional episode // Digressions.

- To identify patterns in the interactive-dialogic learning interaction across CLUs, ILUs and RLUs

The initial intention to undertake an extensive investigation of all three types of ILUs with regards to learning patterns altered as the analysis process progressed. Since the main focus of the thesis is the students' cognitive engagement, I have made the decision to bring into tighter focus the patterns of the interactions with peers. To this end, three strands are pursued in the analysis: *the Content-related work, the Language-oriented work, and the Management-of-the-learning process* strands.

The micro-analysis of CLU structure and strand representation highlights the different functions that a move (or parts of it) can play simultaneously across these strands, which shows how strongly fused these three strands are. Thus the way in which the strands are represented can be regarded as an indication of how students shift their focus between content, language and task management. These patterns can inform us with regards to the shape this interaction takes and how learning focus is distributed during learning under the CLIL approach. I would argue that the dual focused (content and language) learning usually invoked in the literature about learning in the medium of a foreign language takes the shape of *learning interaction of three foci* here, if one is more prominent at any one time.

Another observation would be that strand representation should not to be regarded as a direct measure of the learning value of any CLU. Most CLUs display interplay of stronger represented and lesser represented strands and as pointed out above, the emergence of lesser represented strands is not necessarily an indication of little learning value in a conversational unit.

- To uncover emergent patterns in the argumentative dynamics of the content grounded strand in the interaction with others

With a tightened focus on the students' cognitive engagement within conversational unit (i.e. in the interaction with peers), the following patterns have been suggested. *Minimal content-related argumentation* which refers to those instances when answer proposals are accepted with very little or no negotiation or discussion. Then, *tentative content-related argumentation* which regards those situations in which answer proposals are initiated and some reaction indicative of engagement is evident. Finally, s*ustained content-*

related argumentation which refers to those instances when students manage to evaluate peers' proposals, pose challenges, and defend or provide justifications for assumed position.

One notable finding here has been the occurrence of *explorative conversational digressions* which bring added cognitive value to the peer-sustained learning interaction. It has been argued here that these explorative digressions are the very nucleus of the higher order argumentative kind of interaction. It then becomes paramount to understand is what prompts these opportunities for argumentation. This study documents that they are prompted by perceived ambiguities, intriguing facts, or conflicts/ inconsistencies between own views and others'. The analysis also shows that these digressions are sustained through students' focused inspections of the focus of the topic and or/task.

- To identify the cognitive engagement that underpins the learning interaction with peers and the MKO

This has been investigated under emergent IDZ in the interaction with peers in parallel with extending IDZ in the interaction with the MKO. Three aspects have investigated that can be compared and contrasted:

1. *The nature of the thinking exercise in the interaction with peers vs. Aided progression with the exploration of content and task* (Students' tendency to digress and slip into explorative dialogues is complemented by the more cumulative, focused dialogue with the MKO in terms of identifying those salient features necessary to solve the task. Thus, the former brings added value to the learning instances in terms of exercising an explorative type of thinking while the latter focuses more on acquisition of propositional knowledge. Another observation is that higher order thinking activity is evident in both the interaction with peers and the MKO; however, there is a qualitative change in the cogitation of which students become capable with assistance from the MKO, i.e. a progression from their current level of ability to the potential one becomes visible).

2. *Decoding and emergent fluency in the interaction with peers vs. Supported L2 decoding, production and fluency* (Meaning making within the peer-directed interactions reveals both instances of more

individual as well as collaborative construction of meaning; then both an intentional and more spontaneous manipulation of L1 and L2 (codeswitching); finally, conflated word forms emerge as a result of students drive to communicate and focus on propositional information. In the MKO driven interaction, due to the increased pressure to maintain the learning dialogue in L2, the number of conflated words documented is significantly higher with the difference that unlike in the conversational dialogues, in the instructional interaction specific scaffolding is documented to strike a balance between fluency and accuracy in L2. In addition the notion of *embedded linguistic scaffolding* has been introduced here to represent non-intrusive and on-the spot type of linguistic support for students to enable them to maintain the flow of the propositional focus).

3. *Management of perceived learning tools vs. Construing instructions and modelling work method* (In the student governed interactions the learning tools perceived by students are primarily peer's expertise and their social relationship. This is complemented in the instructional interaction by explicit guidance regarding learning tools and how to draw on these. The intricate bond between the MKO and novice learners is illustrated here through the notion of *cascade type of scaffolding* whereby the teacher's instructions/ explanations are broken down and made available to students by the more able peers).

- To map the knowledges underpinning students learning strategies in the interaction with the task

Personal and shared knowledge regards matching incoming information against existing knowledge structures, but also seeking and extending knowledge structures. Then, *linguistic and discourse knowledge* shows students manipulating L2 text as follows: deconstructing and analysing, reconstructing and trialling, and expanding and experimenting. Finally, *procedural Knowledge* is about manipulating and organising information from available learning tools (corroborating information in a cumulative fashion, exploiting information in a compensatory manner, selecting/matching information in order to identify higher relevance information, and applying structure on selected information).

In brief, the CLIL learning experience described here, shows potential to generate cognitively engaging dialogic interaction. A direct correspondence with Mercer's types of talk is not inferred here, but as illustrated in the analysis, some of the interaction of minimal argumentative value tends to be that in which a disputational mode takes over. Then, the tentative argumentation appears to evolve in a more linear fashion and displays features of cumulative talk. Finally, the sustained argumentation is where an emergence of explorative talk is documented (see Mercer, 2007). Particularly, the explorative digressions show that this kind of learning approach has potential to sustain the development of a type of dialogic interaction that can prompt and advance thinking.

Moreover, the learning experience witnessed here is a Knowledge building platform which reinforces a learning path where manipulation and corroboration of different types of Knowledge in order to access and operate in the L2 mediated learning space becomes central. This learning experience can potentially lead to

- *Conceptually* – emerging argumentative stance and critical thinking aptitudes
- *Linguistically* – an increasing ability to balance top-down and bottom up processing which can be a solid basis for meaningful target language learning
- *Procedurally* – a boosting of metacognitive awareness can result in enhanced sensitivity regarding the managing of cognition at the interface between the individual (self-regulation) and the social (inter-thinking)

The *potential* outcomes summarised above, point towards a need for replications of this study in other contexts in order to develop further the trustworthiness of the findings documented here. In addition, the availability of the databank attached on CD-Rom as Annex calls for further research in areas such as dynamics of ILUs and CLIL specific scaffolding techniques that could not be covered here purely because of space considerations.

Finally, some links between the findings of this study and the findings of other CLIL based empirical investigations will be summarised here.

My study confirms findings proposed by Volmer and colleagues (2006) that students work at a deeper semantic level when confronted with L2 mediated

input, and that there is intensified mental construction under L2 mediated learning conditions. I also concur with Badertscher and Bieri, (2009) who show that L2 mediated learning generates negotiation of meaning of a deeper kind with discernable phases. In addition, my study notes that CLIL students display a high degree of engagement with tasks, tolerance to frustration especially when ambiguity arises, and a high degree of procedural competence, all of which are also supported by research undertaken by Volmer *et al*. (2006). The literature also documents that CLIL students are particularly strong in strategic competence which is also reflected by the current study (Dalton-Puffer, 2011).

On engagement and interaction, Moore (2011) demonstrates that CLIL learners engage more frequently and effectively in collaborative turns than their mainstream counterparts. This study also shows students actively engaged in sustained exchanges of single or multiple focuses, which links with Llinares, Morton and Whittaker's position that dialogic–interactive CLIL models provide opportunities for cognitive development (2012). My study also highlights certain conditions for cognitively rich learning experiences which arise from the nature of the L2 mediated phenomenon (e.g. ambiguity) and the pedagogical arrangement (e.g. task-based and content-driven learning). Based on their study, Llinares and Morton (2010) also conclude that under the right conditions (e.g. interactional space for students to articulate their thinking) quality learning can arise in CLIL classrooms.

I do not intend through this study to overenthusiastically promote the benefits of the CLIL pedagogy, but I would argue that there is definite theoretical value in the ideas behind this and that it does seem to hold potential to stimulate cognitive growth. Studies from various contexts that have looked at the successfulness of this learning approach in terms of learning outcomes, or the interaction it generates in class have admitted that contextual constraints (e.g. educational culture, class sizes) are accountable to a large extent for lack of successfulness (Nikula, Dalton-Puffer and Llinares, 2013). While such studies can give an indication of how successfully this learning approach is implemented in various educational contexts, they do not really speak about the cognitive value of this approach. Thus, empirical studies based on good CLIL classroom practice and focused on the learning phenomenon would be more in position to inform educators about the value of this approach.

VII.2 IMPLICATIONS FOR CLIL PEDAGOGY

In this section, I shall discuss the implications of the main findings from this research project for CLIL Pedagogy, in addition to making a couple of concluding remarks regarding the place of these findings and consequently of the CLIL approach in the broader theoretical landscape of learning.

Based on the content-driven & task-based CLIL model from this study, I propose that *learning under the CLIL approach* be conceptualised as a *tri-focal learning endeavour*, instead of dual focused as it is commonly held in the literature. This finding highlights the students' shift of focus between the three stands, and also that the management-of-the-learning strand plays an equally important role in the students' work. This tendency for a distribution of focused attention between the three strands should be taken into consideration in the design of the materials. For instance, inbuilt instructions covering all three areas would be useful for students to have.

More precisely, besides asking students to simply produce the answer to a certain higher-order question, a task can also require children to provide an account of the method they employed as a group, or the thinking path activated to arrive at that answer. In this study this reflective side has been covered mostly in follow-up interviews, which can bring added value to the whole learning process. However, in those instances when extended activities are not possible a more integrated approach can be used by building opportunities for reflection in the content-oriented task itself. For example, if one considers the following task: 'Consider the following hypothetical situation. Back in the 1950s, the Romanian authorities decided to open up to a significant wave of migration from certain Arab countries in order to secure political allegiance and labour force for the main industries. If such communities existed today, what would be their main features?'. The focus of the content-grounded strand is clear (features of a hypothetical minority community), although prompting questions can be offered (e.g. Try and consider aspects such as lifestyle, religion, urban –rural location, relationships outside the community). As far as the management-of-the-learning is concerned, such a task could comprise a requirement in which students are invited to reflect on what determined them to select certain features, or how they arrived at the decision, or what they corroborated to gather the information they needed, or what thought processes they activated in the course of solving the question. On the linguistic front, there is also scope to

enrich students' experience on this task. Several alternative *labels* can be offered for minority communities in both languages and students can be asked to try to identify *whose* perspective underpins the formulation of those linguistic labels attached to these communities.

Following from the above exemplification, one can see that a consideration of the three strands can offer a solid opportunity for children to exercise not only their cognitive faculties but also to strengthen their metacognitive awareness.

Another, important finding highlighted in this study concerns the students' argumentation, more specifically the emergence of those explorative conversational digressions which as documented appear to bear the most cognitively engaging exchanges between the students. There are several conditions that contribute to and sustain the generation of such explorations: intriguing and captivating topics/facts generative of cognitive conflict; a certain level of conceptual and linguistic ambiguity inbuilt in materials/tasks; high relevance of the task in order to ignite a sufficient level of motivation to pursue the task at hand, and awareness of the cognitive value of collaborative and dialogic work. All of these need to be carefully considered in planning at all levels, from configuring the syllabus to planning individual tasks.

For instance, in order to ensure a selection of stimulating topics for the language and content integrated curriculum, educators could start making links between the more technical specialist content (e.g. political and administrative autonomy) and current issues of a more controversial nature (e.g. The legitimacy of the move for autonomy in Transilvania). Exposure to such debates can take students beyond acquiring the propositional content of any particular science. Such topics provide opportunities for students to come out of a comfort zone delimited by conventional knowledge and rethink previously formed ideas.

Alongside cognitively engaging content, students should also be presented with meaningful tasks. Suppose a class teacher was interested to introduce young learners to the idea of empirical research more precisely to one research genre (interviewing) and link this with historical figures. Let us consider the following scenario: students are asked to learn about features of interviewing (e.g. formulation of questions and prompts) and then apply these by engaging in an imaginary exercise of interviewing a well-known historical figure (e.g. Alexandru Ioan Cuza, ruler of Romanian Principalities 1862 about the events surrounding his abdication in 1866). Although the idea has value

as it puts students in the situation to seeking information by considering who they interact with and therefore what register and language would be appropriate. However, moving into an abstract exercise straight away may prove problematic for children. To add to the meaningfulness of such a task perhaps students could first practice for real interviewing older relatives who may have experienced World War II, for instance, and with whom the children can connect. Once they have had this hands-on experience which is likely to make an impression on them, then a more hypothetical exercise with an instructional drive can become more meaningful.

A certain degree of ambiguity either linguistic or conceptual can be beneficial if it is well explored and exploited. This study shows that pitching the language level slightly higher than the students' current ability, sends them on a quest for meaning, a process during which they activate various types of knowledge. Similarly, giving students slightly fuzzy pictures or incomplete pictures to accompany a text for instance stimulates them to look for links and recreate the whole. Presenting students with a concept (e.g. colonialism) and providing a list of features in which one introduces features that do not sit with the concept also stimulates the children's desire to make sense of the content at hand and stimulates their critical faculties. To this, I would add the value of collaborative and dialogic work. Educators need to take this on board when designing tasks and whole lessons to allow that needed space for children to interact and mull over ideas through dialogue. Finally, the idea of task itself (a job with an aim or a problem with at least one if not alternative answers) has inbuilt the idea of a finality which is what probably keeps children focused more so than generic class activities.

A further aspect noted in this study regards the notion of scaffolding. Two main types of scaffolding have been documented with predominance. Firstly, the embedded linguistic scaffolding is quite an obvious technique here since the module is a content-driven one and the focus has mainly been on keeping the flow of the content exploration. Such on-the-spot linguistic scaffolding requires a fairly high linguistic ability on the part of the teacher and also good understanding of the students' L1. Especially for content teachers and language teacher of a lower level of proficiency, maximum exposure to naturally occurring L2 is needed and also explicit training in how to deal with synonymy, paraphrasing, emphasis and intonation in order to be able to smoothly employ these techniques in their teaching. Secondly, cascade type of scaffolding has been documented here whereby more able students tend to

unpack instruction or content or language to peers who are in more need of assistance. This again needs to be considered when designing lessons especially when considering the pace at which one intends a lesson to flow and how much one aims to cover. Students seem to need a great deal of space in order to take in input, double check meanings, or make sure they are on the right track. Beyond planning the lesson, this also has massive implications in terms of syllabus design more exactly in terms of breadth. It has become clear through this study that the CLIL learning experience is extremely rich; nevertheless, there will limits as to how much can be covered in a module for instance.

Finally, activation of different types of knowledge has been documented in this study. The use of different types of knowledge, in particular manipulation of learning tools can become a transferrable skill with application across the curriculum. Enabling students to apply and extend skills beyond the immediate context in which these skills have been acquired, would need cooperation across the school curriculum. More exactly, this implies an identification of other subjects where such skills may be useful. For instance, manipulation of tools in a CLIL lesson to extract meaning is in fact manipulation of different sources to collect information. This is a skill that can be applied in any research project across subjects.

Throughout the Analysis chapter, I have provided illustrations of learning encounters on a continuum between less and more successful learning, and have given an indication in terms of frequency of occurrence when appropriate. I would like to reiterate that the CLIL model pursued in this study has been moderately successful, with many instances when students' failure to perform was accounted by pedagogical misjudgements of some nature (in planning or delivery). Those cognitively rich learning exchanges demonstrate the potential that this learning approach holds.

It becomes paramount, at this point, to synthesize what precisely from this CLIL model has contributed to making it part of a reasonably positive learning experience; in other words, to be explicit about what features of the CLIL approach account for its potential to sustain deep learning. As noted earlier in this thesis, a certain level of *ambiguity* can lead to deep search for meaning which is attributable to the integrated nature of the propositional information and the foreign language. In addition, the development of a macro-strategic competence as learners stems from *the need to attend to and manipulate*

various affordances in order to extract the needed information. Furthermore, an ability to articulate one's thinking dialogically comes from *having to use both languages*, i.e. frequent codeswitching and challenges re linguistic knowledge of both. Finally, activation of various types of knowledge comes as a result of having to access content and/or language pitched at a slightly higher level than the actual level of the students.

The above enumerated features can be safely argued as CLIL specific whatever the CLIL model. There are, however, a few other features from other learning approaches that lend themselves to CLIL and give it added value. Task-based learning is the obvious one in this study, in addition to collaborative/dialogic learning. They both add to it greatly in terms of tightening of focus and making content more manageable, but also in terms of raising motivational levels. Students' drive to pursue a learning instance, to engage with peers, MKO and tasks is the main factor in determining the successfulness of any learning activity. The CLIL approach cannot alone account for the deep learning or the successfulness of some of the most illuminating learning instances from this study. Nor can this be accounted solely by a task-based approach. In reality, there has been a complex network of factors that have ensured deep intellectual engagement from the way in which the almost hybrid content-driven and task-based CLIL model has been set up and delivered, to contextual elements regarding the learning environment and psychological factors pertaining to individual students.

I would like to revisit my incipient conceptualisation of CLIL as *a dual focused type of learning which holds as central the delivery of subject matter through a target language*. Upon reflection, the 'I' in CLIL which stands for *integration* represents a *three-fold amalgamation* of propositional, linguistic and management-of–the-learning work, as opposed to just integration of language and content. Further, the second 'L' in CLIL needs some revision in that the notion of target language should be supplemented by the notions of bilingual linguistic provision and multiple literacies. As mentioned in the Analysis chapter, especially students with limited English coming from a learned route loaded with Cambridge type of linguistic training, tend to pay greater attention to discourse features in L1 and concentrate more on discrete items in L2. This is not surprising given the level of attention they give to discrete items in papers such as Use of English. A corroboration of both angles for students following this learning route is beneficial until students begin to notice that a discourse approach to text can be applied to L2 texts as well, in

the same way they do in L1. This does not mean to say that once they master a more global discourse picture of text in L2 (awareness of voice, tone, targeted audience, implied meaning, wrapped up meanings) the role of L1 finishes. On the contrary, teachers can explore nuanced meanings, cultural embeddedness in linguistic forms and many other avenues that can be opened up through bilingual exploration.

Furthermore, on the use and role of L1 in the CLIL lessons, a possible future direction is to ensure a bilingual approach to the creation of materials. One main feature that would set the CLIL approach apart from immersion type of programmes, for instance, is the profile granted to students' mother tongue. A mere role as a crutch or a translation instrument would not do justice to the students' first language which alongside the target language needs to be nurtured and elevated. Thus, any concerns regarding the demise of the academic register, for instance, from languages of less prominent profile than English can be overcome. Similarly, if both languages are equally exploited then the debates around the replacing of L1 with L2 mediated instruction becomes something else altogether, i.e. an enhancement of L1 mediated instruction through the addition of a foreign language. This proposal of bilingual education make sense in an increasingly globalised world, with the mention that globalisation should be read as glocalisation, i.e. promotion of pluriculturalism and multilingualism.

Up to now, I have focused on the main findings in this study and their pedagogical implications, in addition to framing a re-conceptualisation of the CLIL approach. I shall now turn to more practical matters regarding its implementation in educational settings. As seen in the description of the teaching arrangement and then throughout various observations from the analysis, teaching under this approach can be both conceptually and linguistically demanding. Cooperation between two teachers and engagement with relatively small classes may be desirable for a successful implementation. Cooperation between two different specialist teachers, or between a CLIL teacher with double specialism and a teacher assistant would ensure that the sensitive teaching described in this study reaches more students and not only the most able ones. Although such recommendations of three-strand specialised tasks, small classes with two teachers available, and lesson extensions reminiscent of one-to–one tutorials may not be a selling point with any financial department of any educational institution; *provision of quality learning* should be however.

As far as the host context in this study is concerned, I would like to argue that CLIL models of the kind described and applied in this study should become more often the norm than the exception in a Romania. As revealed in the Introductory chapter under macro-context, Romania appears to me to be a country in need for internationalisation. This is not only needed because of the political and economic reality set by the creation of the European Union. This is probably more needed in order to challenge deeply set mentalities and help people embrace diversity. Moreover, with direct relevance for schooling, CLIL modules of this kind delivered to young learners are timely. As argued elsewhere (Hawker, 2008), at the exit end from secondary school, A level students express worrying concerns about the lack of genuine opportunity for critical engagement, free thinking and openness to cultural diversity. Sustained exposure to irrelevant and outdated matter combined with cognitively non-stimulating teaching styles can seriously dampen motivation and encourage mediocrity. Thus, CLIL initiatives across the curriculum can be a breeze of fresh air for Romanian students of all abilities, an opportunity for progressive education that would enable informed intellectual choices.

Turning to a broader and more abstract discussion of the learning phenomenon, it seems timely in this thesis to illustrate how the more generic theoretical framework of learning as meaning making translates as a socio-constructivist CLIL model. The subsumed elements of the three main axes are as follows: scaffolded and peer assisted collaboration (*mode*), L2/L1 conversational, instructional and reflective dialogues *(medium*), and personalised knowledge and strategic competence *(purpose*).

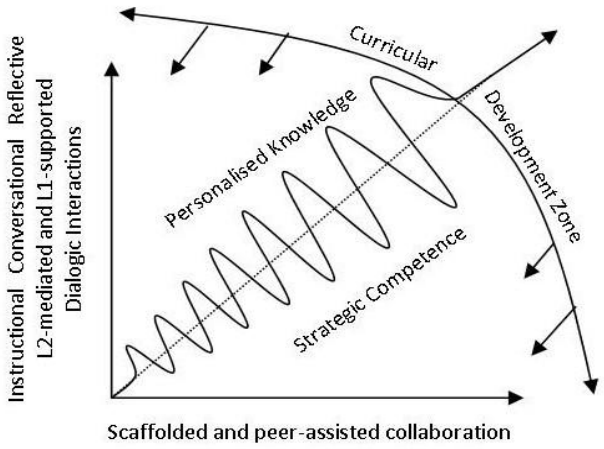

Diagram 11: A socio-constructivist CLIL model

If one starts by focusing on how learning of this kind occurs naturally, in other words on how children go about their learning when dealing with content presented to them in the medium of a foreign language, one allows the nature of the learning phenomenon itself to drive this model. Thus this diagram can be presented as a Content and Language Integrated model of learning where the triptych suggested earlier *engagement, dialogicality and knowledge* reads as follows. The mode of engagement is a fluid interplay of teacher scaffolded and peer-assisted collaboration which can arise naturally as a result of the need to draw on different levels of expertise when exposed to L2 mediated content. The medium of learning is a purposeful alternation of mother tongue and target language both of which sustain integrated conversational, instructional or reflective dialogues. The purpose of learning is the activation of knowledge (topical, procedural and linguistic) and its manipulation. Through this process of activation and manipulation, knowledge becomes personalised and what emerges is a strategic type of competence which can transcend the boundaries of the content and language integrated curriculum.

An interpretation of this diagram from a pedagogical angle informed by the Vygotskian idea that instruction drives cognitive growth would start with the Curricular Development Zone (the curved axis). Here is where the goals and content of learning are established which their turn inform the choices regarding the mode and medium of learning. These educational goals (small arrows) should inspire pedagogical choices that would create optimal conditions so that learning under this approach can reach its full potential. In other words, inspired pedagogy can ignite a broader Intermental Development Zone that networks thinking arising on different levels (e.g. theoretical-pedagogical, expert-novice). Thus the arched arrow represents not the curriculum as such as a school document but its intellectual force. The arrow the shoots beyond the curricular development zone represents students' knowledge and competence which stand for cognitive growth here. In other words, if the curriculum inspires fruitful learning conditions then the result can be cognitive development that exceeds current educational goals and anticipate future educational needs. Provided that curricular directives are underpinned by a progressive view of cognitive development in general, and a solid empirically-based and theoretically-informed understanding of the L2 mediated phenomenon, then there is a good chance to witness quality packed learning events in CLIL classroom practice.

Epilogue: Learning as reiterative meaning making

We are born and we die; between, we learn.

(Clark, 2005:667)

In the prologue of this thesis, a view of learning as contemplation and participation has been introduced.

My thesis endorses a view of learning as arising at any point on a continuum between socially-driven and individually-construed events. Learning is both knowing and becoming. On one hand, it is a process of enculturation in that students are apprenticed into the socially shared knowledge, values and practices of a certain educational community; students are expected to understand and master the discourse of their own learning environment. On the other hand, learning is a process of emancipation whereby students seek to question and challenge the status-quo of those socially shared bodies of knowledge, practices and values.

The learning experience under a socio-constructivist CLIL model seems to shape an epistemic and reflexive individual. The process of learning shows learners slide across layers of discourse and move up and down different degrees of complexity in this process of meaning making; as a result social and individual cognition shape each other, with new knowledge being generated and revisited at increasingly higher levels of reflexivity.

I see Learning as an inclusive event and an integrated process of discovering, absorbing, reflecting, and reshaping the worlds around and within the self.

VII.3 CONCLUDING REFLECTION

I have taken on this research project as an explorative study with the intention to further my own understanding of how students learn under the CLIL approach and also with a view to making a contribution in the debate about the value of the CLIL learning approach.

It has become clear that the political direction of European integration has significantly raised the profile of those already widely used languages for international communication. The emergence of the CLIL approach and its inclusion in local curricula has been justly followed by a call for the investigation of its learning value and pedagogical feasibility. Based on this study, I would argue that CLIL learning of the kind described here does have the potential to sustain higher order thinking, dialogic interaction, knowledge networking and manipulation of learning tools. However, there are certain pedagogical implications that need careful consideration to ensure the successful implementation of such a complex and enriching learning environment: provision of adequately trained staff willing to extend their expertise and ready to cooperate; a view of a more integrated curriculum across disciplines nationally as well as at the level of individual schools; and finally, an emphasis on quality which means settling for depth rather than breadth and targeting manageable size classes as opposed to large cohorts. This may sound like educational provision for élite schools and privileged students which could be the case if the implementation of this approach happens only at grass roots, i.e. supported just by a few individual schools with parental support. However, under an implementation with the support of the national educational authority, many of the conditions (staff training/ reorganising of work load to match the teaching of smaller classes) would be fulfilled, and therefore this approach would reach a wide range of schools.

As the narrative of this project comes to a close a brief reflection on how I have arrived at the presented findings and conclusions seems appropriate. I meant this from the very beginning to be the product of my own systematic and disciplined investigation but at the same time to allow the projection of the students' perception of their own learning in order to do some justice to the complexity of human learning. Nevertheless, this is not only about the knowledge we generated in particular or what we found out about learning in general. It is also about the journey and who we have become in this process.

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