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Introduction: Content and Language Integrated Learning

There is a new supply chain in language education, namely teaching content subjects through English. Alongside a surge of demand for English language teaching itself, we can increasingly see evidence of unprecedented numbers of students learning content subjects through English across the globe. This has led to the emergence of Content and Language Integrated Learning (CLIL). CLIL is a dual-focused educational approach in which an additional language is used for the learning and teaching of content and language with the objective of promoting both content and language mastery to pre-defined levels. CLIL is a methodological approach particularly suitable for contexts where students learn content through an additional language. The demand for teaching subjects through the medium of English is increasing exponentially. This provides an opportunity for the EFL teaching profession to both reconceptualise the boundaries of the profession, and take advantage of new opportunities to upgrade student learning outcomes.

1. Introduction

The emergence of the information age has resulted in sweeping changes in how societies, and the educational systems that serve them, operate. In this new situation, creativity, intelligence, and connectivity have become key resources for success. This is placing new demands on educational systems resulting in the need for the creation of innovative working models. These innovations often require moving away from fragmentation towards integration. This involves following a process of convergence in which there is fusion between sectors which may have been quite separate in the past. Convergence is having a major impact on societies in different ways ranging from political to technological, from financial to educational. The speed and significance of change not only leads to the introduction of rapid solutions, but also a challenge to the *status quo*. This can be seen politically in new regional integration, financially through trade cooperation, and educationally through harmonising of educational standards.

Profound change is now affecting the significance and position of the teaching of English as a foreign language. Having increased its importance

as a ‘commodity’ in many societies, the ways and means by which English is taught and learnt has come under scrutiny. This is mainly because of three factors. First, there is now a greater need to develop English language competence across broader sections of the population than earlier. Second, the effectiveness of the ways in which people learn English has come under scrutiny with respect to efficiency. Third, the position of English is undergoing significant change in certain societies (mainly from foreign to second language) which prompts a re-thinking of how the language is taught.

2. Professional Adaptation of EFL for Modern Times

Educational convergence leads to the creating of innovative approaches and methods that help teachers and learners adapt to the needs of the communities in which they live and work. This is now particularly true of the teaching of English worldwide. CLIL has emerged as one example of educational convergence. The term was adopted in Europe during 1994 to help professionals explore the types of good practice and sometimes very significant outcomes being achieved where scaffold methodologies were used to learn both language and authentic content. In numerical terms, English has been the most commonly adopted vehicular language within Europe (Eurydice 2006), and globally.

In the 1990s those experts involved with CLIL began to recognize that they were dealing with something which was neither language teaching, nor subject teaching, but rather a fusion of both. This fusion introduced a higher level of relevance and authenticity within the learning process than could be otherwise achieved with a traditional model of the English language classroom. It also provided more time within the curriculum for meaningful exposure to the language.

Thus the process of educational convergence led to a methodology being formed which was drawing on both content and language learning, and which was considered ‘integrated’. This integration offered a radical change to existing English language teaching practice. CLIL emerged in contexts where educational provision required upgrading; language learning levels needed to be improved; and content-related educational outcomes were not being achieved.

The key performance drivers of an information age society are commonly cited as the Knowledge Triangle. These involve integrating education, research and innovation, for managing successful change and adaptation. These form the basis of CLIL methodologies. CLIL involves the use of language-supportive methodologies leading to authentic learning where attention is given to both topic and language of instruction. As Eurydice points out, “achieving this twofold aim calls for the development

of a special approach to teaching in that the non-language subject is not taught *in* a foreign language but *with* and *through* a foreign language" (Eurydice 2006: 8).

The dual focus of having simultaneous content and language learning outcomes marks a change from conventional practice in both subjects and language teaching. This divergence became more pronounced as research on CLIL gave rise to the triple focus concept, whereby content and language goals are pursued with a sophisticated understanding of student cognition, usually referred to as thinking skills (see Mehisto/ Marsh/ Frigols 2008 and Coyle/ Hood/ Marsh 2010). CLIL was found to act as a catalyst for change because it provided teachers with considerable opportunities for re-thinking educational practice and reaching out for an upgrading of performance.

The essence of CLIL is in integration. The methods used in the classroom depend on a set of core variables. These are interwoven into the curriculum and realized through classroom practice. They revolve around the type of subject learnt, the cognitive demands involved, and the pupils' linguistic competence and learning load.

When CLIL is incorporated into the curriculum, language takes its position at the centre of the whole educational enterprise. All teachers take responsibility for nurturing its development in the classroom. This is because successful language acquisition depends on the amount, quality, and richness of *input*. Yet, not all input becomes *intake*. And if there is limited *intake* then there will be equally limited opportunities for *output* which is the realization of meaningful language usage. In the successful examples of CLIL all teachers consider themselves to be responsible for language development to a greater or lesser extent, even if the language focus is very, very small indeed.

CLIL does not necessarily correlate with the maximum exposure hypothesis (the more you have the better you become). This has often been an erroneous assumption in the introduction of teaching subjects through the medium of English where quantity has often taken precedence over the provision of quality learning environments. A limited amount of learning authentic content with appropriate methodologies through a foreign language can go a long way towards achieving various positive outcomes. These could relate to the development of language learner self-confidence, or through utilizing preferred language learning styles and approaches for which there is often too little time available in formal language lessons.

CLIL presents an opportunity and a threat to accepted EFL practice. The so-called communicative dimension of language teaching, where the language is treated as a functional tool rather than the explicit object of study, is currently moving into the realm of authentic subject teaching. Often involving few contact hours where students learn appropriate topics,

rather than whole subjects, CLIL complements parallel formal but adapted language instruction.

This has direct implications which are likely to impact on different types of EFL practitioners. One feature of CLIL teacher competence relates to good understanding of the major first language of the environment. In this respect, the non-native speaker of English is emerging as a particularly successful CLIL teacher. The dominant role of the native speaker EFL teacher, if monolingual and employed to encourage language practice, is increasingly undermined.

> The CLIL approach is based on the well-known assumption that foreign languages are best learnt by focussing in the classroom not so much on language – its form and structure – but on the content which is transmitted through language. (Wolff 2009: 545)

CLIL is a form of language learning, but it is rarely a form of language teaching. Language teaching definitely plays a key role, but it has to be done in conjunction with authentic content teaching and learning. Content drives most CLIL implementation. This is because it is more often within the domain of subject teaching, rather than language teaching. Ideally, these would be done in a complementary way (as is the case in some countries), but this is often not the case. Within the educational profession, CLIL is seen as an interdisciplinary approach which may be realized through a variety of models where attention is simultaneously, and systematically, given to both topic and language.

> Variation can be represented on a scale which reaches from pure foreign language teaching on the one end to a form of content teaching in which the focus on language is almost non-existent, and the foreign language is predominantly used as a working language. The former interpretation could also be called a language-learning, the latter a content-learning interpretation. […] The other interpretation in which the foreign language is used as a working language leads to a different, content-oriented methodology which is strongly influenced by mother-tongue content subject teaching. In its purest form this concept strongly relies on the immersion idea, in which it is assumed that learners inductively pick up the foreign language while working with content. Most CLIL specialists locate themselves more towards the content-oriented end of the scale, although most of them do not believe that learners can tackle the difficult task of learning the foreign language purely inductively. They opt for an integration of language and subject teaching in order to use the full potential of the integrative approach. (Wolff 2009: 550)

This breaking of boundaries, and changing of the ways in which some subjects are learned as separate disciplines, is one characteristic of the ‘CLIL learning curve’ which can be tracked in Europe over the period from

1990 until 2012. There are now signs that similar trends can be seen in the Middle East, East Asia, and South America.

The language teaching profession has sometimes viewed CLIL practice as an external and negative phenomenon, mainly as a reaction against changes in the status quo, but also because "CLIL programme implementation often causes disjuncture – a tension between one's current way of doing things and a new approach. […] Many teachers find it difficult to apply a multiple focus on content and language, as well as on cross-curricular integration, cognition, and reflection." (Mehisto 2008: 113).

3. CLIL Implementation and Expansion

Interest in CLIL has spread exponentially during the last few years. This can be seen in activities such as publishing, launching of teacher development programmes, research, and overall internet exposure. The extent and characteristics of its implementation, however, vary from one country to another depending on factors such as the specific linguistic situation; the linguistic needs of the population; the degree of autonomy of the education bodies; the quality of educational infrastructure; the flexibility of national curricula; and, teachers' qualification and training programmes.

The reasons for CLIL implementation include: diversifying methods and forms of classroom practice; building intercultural knowledge and understanding; enabling students to access international certification; increasing learner motivation and building self-confidence towards learning English; giving added value to the learning of content; preparing for future studies and working life; and, enhancing school and region profiles.

Some CLIL initiatives have been driven by the need to enable change in educational practice with respect to English language learning. In such cases, levels of student competence in English have been considered too low given the investment of time within the curriculum. In addition, the teaching approaches used for subjects other than English have also been considered suitable for further methodological development.

CLIL initiatives often provide a catalyst for change within schools because they involve fundamental changes in not only the language of instruction, but also in the types of teamwork and curricular planning necessary to promote curricular integration. Thus it can be argued that a major reason for the implementation and development of CLIL initiatives is linked to curricular innovation and educational reform.

There is another key issue which concerns all EU countries, and this is the Recommendation of the European Parliament and the Council (18 December 2006) on *Key Competencies for Lifelong Learning*. The

recommended key competences for lifelong learning concern communication in the first and additional languages; mathematical, scientific and technological competences; digital competences; learning skills; interpersonal, intercultural and social competences; entrepreneurship; and cultural adaptability. Objectives of competence-based education such as these directly complement those of CLIL practice particularly with respect to communication and learning skills.

4. Current Trends and Trend Consolidation

There appear to be four trends occurring simultaneously:

1. Increased demand for English language in many countries where political agencies call for a re-thinking of the teaching and learning of English.
2. Increased pressure on certain schools to compete, or otherwise achieve certain benchmarks, in order to recruit certain types of students, and possibly funding. International schools (however this term is defined) have special status in this respect, and in these schools the 'learning of subjects through English' is one of the most obvious features. There is also an increased shift towards providing degree courses through the English language in Higher Education.
3. Increased understanding of what types of educational methodologies need to be applied if schools are to successfully teach (partly or otherwise) through the medium of English as an additional language.
4. Increased demand for systemic structural change in certain educational systems to adapt to the social and technological changes in the wider environment (in Europe and elsewhere). This change involves moving educational practice away from 'transmission models' which have stubbornly remained commonplace, towards constructivist participatory modes of learning.

The trends currently reveal:

- increasing evidence that CLIL enhances overall learning of language and content (see Coyle / Hood / Marsh 2010)
- increasing demand for English language (see Graddol 2006)
- recognition that 'learning by doing' through socio-constructivist methodologies is effective for achieving positive outcomes across a broad student cohort (see OECD 2007)
- acknowledgement that CLIL provides leverage for international linkage and resource-building. This is partly due to networking across countries becoming easier because the quality and cost of communication technologies and ensuring social connectivity through English as a global lingua franca (see CCN 2010)

- change of status of English language as a foreign language towards an 'assumed competence'; alongside high levels of fluency amongst young people in specific countries. This is viewed as resulting from environmental exposure and use of English through ICT applications (see CCN 2010).

There are signs that the diversity of CLIL variants at the outset is now becoming consolidated with specific models emerging. There appears to be consolidation of CLIL mainly in the form of modular approaches which are cross-disciplinary (environmental studies, citizenship programmes in English), and whole subjects taught through English (mathematics and sciences in conjunction with ICT).

5. Emerging Insights from the Neurosciences

Since 2000 the field of neurosciences has expanded due to ongoing advances in technology enabling researchers to 'look inside the mind' on an unprecedented level. Research is increasingly examining if knowing and using more than one language has a structural or otherwise positive impact on thinking and the brain (see Marsh *et al.* 2009). The use of neuro-imaging techniques in laboratory settings is now enabling a breakthrough in understanding what happens within the mind and brain when a person learns or uses more than one language. Coggins, Kennedy, and Armstrong argue that "(it is) […] possible that bilingual learning can have a profound effect on brain structures" (2004: 73).

Although it has often been assumed that impact on the mind and brain would only be found if a person has a very high command of different languages, recent studies suggest that changes in the brain may start even in the earlier stages of language learning. Osterhout *et al.* report that "classroom-based L2 instruction can result in changes in the brain's electrical activity, in the location of this activity within the brain, and in the structure of the learners' brains. These changes can occur during the earliest stages of L2 acquisition." (2008: 510).

The cognitive neurosciences also stress the need for powerful learning environments. Yet for various reasons, including teaching approaches and availability of time within the curriculum, not enough language education is spent encouraging learners to engage in higher order thinking about meaningful content. There is now an intersection between the neurosciences and education, which acts as a driver in developing innovative approaches to learning such as CLIL. "After two decades of pioneering work in brain research, the education community has started to realize that understanding of the brain can help open new pathways to improve educational research, policies and practice" (OECD, 2007: 13).

This also has implications for understanding why certain language learning methodologies such as CLIL appear to lead to positive learning outcomes. The impact on the brain of knowing a second language, especially in relation to certain neural advantages, is increasingly being considered in relation to CLIL-type educational provision.

6. Emerging Insights from Foresight Analysis

Demand for learning English, and learning through English, is viewed as continuing to rise in numeric terms. (see Graddol; 2006, 2010).

The main trends as identified in Marsh 2005, Marsh *et al.* 2006, 2008, 2009 and CCN 2010) are summarized as follows:

- There is an increase in the social demand for improved levels of competence in English, and the attraction of learning through English.
- Learning subjects through English is becoming increasingly widely implemented (as a proportion of curriculum at primary and secondary, vocational and higher education).
- Social change resulting from any negative environmental and economic impact further strengthens demand for English language. This is likely to be driven by the more financially secure social sectors and lead to a greater divide (in numeric terms) of those who are increasingly bilingual (mother tongue + English), and those who are not. This demand is likely to result in an expansion of private education providers offering education almost exclusively in English which will impact on the traditional EFL employment markets.
- Demographic trends in certain countries, especially lower birth rates, are considered as leading to greater levels of competition between schools and subsequent efforts to improve profiling. This would result in the enhancing of school profiles through CLIL acting as a major reason for implementation.
- Global competition between universities is considered as involving greater numbers of degree programmes being taught in English. This, in turn, is viewed as encouraging further introduction of CLIL for academic subjects at secondary level.
- Focus on 'learning sciences and brain research' is likely to expand (see OECD 2007) due to the current trend (particularly in OECD countries, and linked to PISA) which is leading to national initiatives that explore knowledge of the brain and educational practice. The significance of competence-based learning through constructivist methodologies within situated collaborative learning environments through English will continue to be given attention. These mirror good CLIL practice

and are likely to lead to recognition that CLIL provides good learning environments for both content and English language development.

- CLIL-type provision is also likely to influence the teaching of other languages. As understanding of good practice in teaching and learning languages expands, there will be a unification of good teacher educational principles which will influence teacher education, and eventually enable change to take place in classrooms. This will have a positive impact on the teaching of all second/foreign languages, but particularly on the teaching of English language, and the adoption of CLIL.

Outcomes of the 2010-2020 foresight think tank on *Languages in Education* (CCN: 2010) provide a range of indicators suggesting that CLIL will continue to develop as a platform for the teaching of languages.

Focusing on languages in education, the think tank considered global forces that are rapidly driving change. These are all core to the future of English language teaching. They include socio-demographic shift; scientific and technological innovation; re-shaped work and organisational cultures; new knowledge and competence demands; imperatives of sustainable development; governance, safety and security; and globalization.

These forces were examined in terms of the neurological, cognitive, motivational and social bases of learning; the dynamics of lifelong learning and the potential of e-Learning 2.0/3.0; value-creating networks and clusters of innovation; education systems and informal learning; human technologies that support learning; technology-based working and operating environments; and private and public sector educational and resources providers.

The outcomes call for sectorial re-shaping of languages in education, and the implications for both EFL and CLIL are considerable. First, the report argues that the added value of learning an additional language is becoming increasingly significant alongside the development of inter-related electronic literacies. The development of electronic literacies is linked to the types of methodology used for education in schools, including languages education. This suggests that the overwhelmingly important stress of unauthentic communicative action current in some EFL will become increasingly redundant, and replaced by authentic communication through CLIL.

Second, the report focuses on e-Learning 2.0/3.0. It argues that the learning logic and navigation which is likely to be found in future solutions will lead to a substantial shift in educational culture across the curriculum. The boundaries between authenticity and simulation are sometimes

difficult to delimit when dealing with the new technologies. For an example the extent to which any *in-situ* 'avatar' can be considered authentic is a complicated issue to resolve. What is increasingly evident is that use of technology interfaces and the influence of connectivity through such applications relates directly to language as communication and therefore language learning. These applications undermine teaching approaches which are heavily knowledge-based (as can be found in much English language teaching) and subject to time-lag (learning now for use at a later stage in time), and are particularly suitable for integrated language learning such as CLIL.

7. Conclusion

CLIL represents a major development step in the field of English language teaching. The implications are considerable for introducing change in a system which became largely fossilized in the 1980s for a range of reasons, including commercial and political interests. The evidence-base now emerging from the neurosciences is likely to be the most decisive reason why CLIL will continue to change the face of current EFL teaching.

CLIL presents both an opportunity and a threat to accepted EFL practice. It acts as an opportunity for enabling a re-positioning and upgrading of the role of the EFL teacher. It acts as a threat by undermining certain fundamental values about the nature of language, fluency and ultimately ownership which still surround the English language even as it has emerged as a global lingua franca.

The essence of CLIL is in integration. The methods used in the classroom depend on a set of core variables. These are interwoven into the curriculum, and realized through classroom practice. They revolve around the type of subject learnt, the cognitive demands involved, and the pupils' linguistic load. CLIL involves the implementation of a specific methodological approach which suits contexts where a dual learning focus is required.

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