

# Current trends in L2 vocabulary learning and instruction: Is CLIL the right approach?

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## **Abstract**

This paper aims to highlight current trends in L2 vocabulary learning and instruction. Scholars in the field of linguistics posit that the learner needs to access a target word's both semantic and morpho-phonological form in order to achieve deep vocabulary learning. Research indicates the importance of activating prior knowledge, learning vocabulary in context, active processing of L2 vocabulary and being provided with multiple exposures to a word thereby approaching incremental vocabulary learning. The results of an experiment show a significant effect of CLIL ( $p = .000$ ) on L2 vocabulary knowledge. The One-way ANOVA demonstrates that the CLIL group outperformed the group which was exposed to the word list method, and the group which was taught the curriculum subject through the medium of L1. Observation data confirm that CLIL presents target words through rich and meaningful content being systematically organised and recycled with positive outcomes on vocabulary acquisition.

**Keywords:** vocabulary learning, context, incremental learning, CLIL (content and language integrated learning), word list

## **1. Introduction**

The educational aims of the European Union create many challenges for EFL courses such as increasing the exposure to the foreign language. Teaching a subject matter through the medium of a second or a foreign language, addressed as Content and Language Integrated Learning (CLIL), might be an ideal means of enhancing foreign language proficiency by providing opportunities to the L2 learner to encounter and use the foreign language in meaningful contexts.

The Common European Framework suggests “participating in courses in other curriculum subjects which employ L2 as a medium of instruction” (Council of Europe 2001: 2). In this vein, the Commission of European Communities communicates in its Action Plan 2004-2006 that most pupils need to be able to “study at least some of their curriculum through the medium of a foreign language” (2003: 11).

The current study examines the impact of CLIL on developing L2 vocabulary knowledge.

## **2. Implementing Content and Language Integrated Learning**

CLIL refers to ‘any form of language education in which subject matter is taught in a second or foreign language. It could be called bilingual education...immersion *and* multilingual education’ (Van de Craen 2001: 210). The ‘acronym is a synonym of Content-Based Language Teaching’ (ibid: 209) which has been rephrased. Content-based instruction in L2 has been put into practice in Canada’s immersion education from the 1970’s onwards and it was applied in the 1980s in the United States to transition children out of their home language into English (Schleppegrell, Achugar and Oteíza 2004). The approach has been gaining prominence around the world the last two decades (Chapple and Curtis 2000).

CLIL approach is a fast expanding phenomenon in Europe as in the rest of the world. School systems over Europe have adopted some form of CLIL, following the European recommendation (Van de Craen, Ceuleers and Mondt 2007). The Eurydice survey (2005: 55) reveals that “the initiatives in the field of CLIL have increased in recent years”. CLIL type provision is part of mainstream school education in most countries at primary and secondary levels.

## **3. Studies revealing foreign language gains**

Evidence suggests that CLIL can be an effective approach for language teaching at all stages of instruction, from primary school to university level in both second and foreign language teaching settings. Short (1994) and Stoller (2004) report that students being involved in such courses exit the courses with improved language abilities and content-area knowledge gains.

Collectively, the results of research findings suggest that CLIL may have positive outcomes on learners’ L2 development. However, scientific research regarding CLIL implementation is still at an embryonic stage. Gramkow (2001) notes that more investigations into the effects of CLIL teaching are needed i.e., more dissemination of experiences and results. Similarly, Wesche (1993: 74) stresses the need for carrying out more longitudinal studies related to content-based learning in language in order “to confirm linguistic, academic and attitudinal outcomes of content-based approaches”.

#### 4. L2 vocabulary development

Vocabulary development is “arguably central to language acquisition and use” (Zimmerman 1997: 17), so educators need to use an effective approach in promoting L2 vocabulary development. Searching for the prospect of an effective approach to vocabulary learning, a deeper knowledge about how people learn words needs to be sought. Therefore, in what follows, what vocabulary learning involves is described. Learning target words through word pairs is discussed and their possible relation to deep comprehension is examined. The importance of activating prior knowledge is stressed and learning vocabulary in context is presented as an approach taking this principle into consideration. The importance of active processing when learning L2 vocabulary, as well as the significance of multiple exposures to a word, is raised and the subsequent need for adopting an incremental vocabulary learning process is expressed. Learning a subject through the medium of the L2 seems to be an approach satisfying the aforementioned learning conditions.

##### 4.1 Describing vocabulary knowledge

Vocabulary learning is deeper and more complex than just memorising a word’s meaning. Full understanding of a word includes several aspects of word knowledge. Radford *et al.* (1999) present a model illustrating lexical entries. This model postulates that a lexical entry consists of its lemma and its form information. Lemma information involves meaning and syntax. Form involves morphological information and phonological forms this lemma can take in speech. CLIL environments expose the learner repeatedly to both the semantic form of the target word and its morpho-phonological form, thus strengthening this relationship. Similarly, Jiang (2002) explains that when a root word enters the mental lexicon, this lexical entry involves two components: The lemma component and the lexeme component. The first includes semantic and syntactic information whereas the second one contains morphological and formal information.

Traditional approaches do not seem to offer all the information required for learning a target word. The data of this study (from the vocabulary pre-test) revealed that primary school children confuse L2 words with others that are phonetically or morphologically similar, e.g., they confused *coal* with *goal*, *plain* with *plane*, *hut* with *hat*, *plants* with *plans*, *destruction* with *instruction*, *heat* with *hit* and *head* with *hate*, *trunk* with *drunk*, *parade* with *pirate*, *poultry* with *poetry*, *cypress* with *surprise*, etc.

#### ***4.2 Word pairs and The ‘Depth of processing hypothesis’***

The traditional approach to vocabulary learning favours systematic vocabulary learning which is based on lists of L2 words presented together with their L1 translations that learners have to memorise. However, interlingual synonymy is very rare. The majority of word pairs are not wholly synonymous in terms of cultural or grammatical aspects. Connotation between the synonymous pairs may differ as well as collocation or register. Therefore, presenting words in isolation does not provide adequate lemma information, raising the risk of misunderstandings.

The “Depth of processing hypothesis” assumes that learners are more likely to remember new words if mental processing is deep enough involving manipulation of the new word (Craig and Tulving 1975: 268-284). Hence, unlike processes providing superficial learning including rote repetition, deeper semantic processing allowing the target word to be grouped with other conceptually related words might enhance learning to greater extent. CLIL could be one way to succeed this.

#### ***4.3 Activating prior knowledge***

Second language vocabulary acquisition research demonstrates the importance of activating prior knowledge. Schmitt and Schmitt (1995) stress that an essential principle which needs to be considered when designing vocabulary programmes is to incorporate target L2 words into language that is already known. This is due to the formation of a rich network of interwoven associations around old-established words. So, when new words are integrated into this network, these associations enable their recall. This issue of connecting new and known information is also stressed by Martin, Martin and Ying (2002), Stahl (1983), and Stoller and Grabe (1993) who support that connecting the target words to students’ already known words and concepts enables new vocabulary learning. Therefore, the primary goal of vocabulary instruction should be to present new concepts that can be applied to the student’s already existing knowledge. The CLIL approach satisfies this condition.

#### ***4.4 Learning vocabulary in context***

Learning vocabulary in context is an approach considering the “morphological, syntactic, and discourse information in a given text” (Nation and Coady 1988: 102) thereby exposing the learner to the total linguistic environment in which a word is encountered and facilitating full understanding of a word (Nation 2001). Comprehension of oral and written discourse takes place most likely when students make meaningful connections between vocabulary and the contexts in which it is found. CLIL instruction allows learning new vocabulary in the environment of meaningful context.

Coady (1997) carried out a synthesis of research studies accumulating evidence that exposure to meaningful and comprehensible language enhances vocabulary knowledge. He reached the conclusion that “if the language is authentic, rich in content, enjoyable, and, above all, comprehensible, then learning is more successful” (ibid: 286). Therefore, it can be postulated that encountering the target word in contexts, such as the subject-matter contexts provided by CLIL lessons, enhances vocabulary development. CLIL methodology provides content-based language environments where contexts demonstrate the pragmatic value of target words.

#### ***4.5 Active processing***

Research review on vocabulary learning by Mezynski (1983) identified active processing as an important factor associated with effective vocabulary acquisition. When students learn by doing something involving target words in contexts, this makes the process of learning active. CLIL seems to provide them with opportunities to become actively involved with new L2 words through class discussions and other content- and language-related activities.

#### ***4.6 Recalling the new word***

Schmitt and Schmitt (1995) pointed out that another important principle that has to be taken into account when designing vocabulary programmes is that of allowing opportunities to the learner to recall the new words. CLIL allows this through various activities, such as comprehension tasks and memory games which require learners to produce the target words.

#### ***4.7 Repeated exposures to target vocabulary***

Providing several exposures to new words enables knowledge of the words to grow. Nation (1990) reviewed several studies which found that learners need to be exposed to five to sixteen repetitions in order to learn a new word. Rott (1999) examined the effect of exposure frequency on intermediate learners' incidental vocabulary acquisition. Results showed that six exposures produced significantly more vocabulary knowledge than two or four exposures. CLIL allows dealing with a particular topic for a sustained period of time providing recurring exposure to new vocabulary through clarifications, justifications etc, with possible positive outcomes. Robinson (2005: 429) conducted a study in order to identify the processes involved while developing L2 word knowledge in subject-matter classrooms. Observation revealed frequent repetition of the key vocabulary by the teachers. For instance, during two minutes of discourse the teacher said the word "friction" 17 times.

Learners are able to understand and use a new word when they acquire the word's pronunciation, morphology, syntactic functions, meanings, collocations or association with specific words, and the particular context in which the word may be used (Nation 2001). The various aspects of word knowledge are acquired throughout repeated exposures to the word. On first exposure to the word, which could be an oral encounter, the learner is likely to remember the sound or an aspect of the sound, such as the number of syllables. When seeing the word in written form, the learner is likely to remember the number of the word's letters. Further exposures and use of the target word can help building up and consolidating the word's essential formal and semantic features (Schmitt 2000).

Robinson (2005: 441) observed that the use of "linguistic frameworks" allows incremental building of sentences. For instance, aiming to explain the word "buggy", a teacher provided the following three phrases based on the same linguistic framework: Noun phrase, verb phrase, adjective phrase plus new information and noun phrase. First, the teacher says "A buggy is a very, very simple vehicle". Then, this becomes "it's a very, very simple moving object", and finally "so it's going to be a very, very simple moving four wheeled object or vehicle". The repetition "... a very very simple..." signals that new information is coming to be added to students' developing concept of the target word. In this way, the meaning of the key word is developed incrementally, that is, new information is gradually added allowing the teacher to control the grammatical complexity of the text. The consistent grammatical structure of the

statements decreases the amount of cognitive processing required, drawing attention to the new information presented each time. These processes of simplification and reduction of linguistic input enable clarification of meanings thereby strengthening the links between word and meaning.

Teaching a subject through the medium of the L2 (CLIL) appears to provide opportunities to the L2 student to activate background knowledge, learn vocabulary in context, process actively the new words, recall target words, and be offered multiple exposures to the new vocabulary.

### **5. Research methodology**

An experimental pretest-posttest research design provided quantitative data about the impact of the CLIL program on L2 vocabulary development. Five CLIL lessons were video-taped allowing observation of the students' reactions to learning vocabulary in this environment.

It was hypothesised that students in the CLIL class would have significant gains in L2 vocabulary knowledge outperforming their counterparts who were either not involved in CLIL at all, or were exposed to the word list method.

The subjects involved in the experimental study were sixty 11-year-old – grade 6 learners who had been studying English in the state school for 3 years. Learners were attending an urban and a suburban school in Cyprus. Three intact classes were chosen at random and were assigned into one control and two experimental groups.

The control group included 21 students who were taught geography through the medium of L1 Greek for five 40-minute lessons. The first experimental group (CLIL group) involved 24 pupils who were taught geography through L2 English for five 40-minute lessons, whereas the second experimental group (word list group) involved 15 children who were provided with the L1 equivalents of the target words throughout five EFL lessons. Initially, the children of the three groups were administered L2 vocabulary knowledge pre-tests and on completion of the unit the groups were administered the same post-tests.

The vocabulary test required students to provide the L1 equivalent of 100 lexical items given in L2. The items were related to content words of the Geography unit and the maximum score was 100. Classroom observation data provided more details on the process.

## 6. Results

The ANOVA analysis of the pre-tests showed that there were no significant differences between the three groups on vocabulary knowledge at the outset of the study (Table 1).

**Table 1. ANOVA analysis of the pre-tests**

	<i>df</i>	<i>Mean Square</i>	<i>F.</i>	<i>Sig.</i>
Between Groups	2	35.49	.402	.671
Within Groups	57	88.40		
Total	59			

The CLIL experimental group showed a significant difference  $p = .000 (< .05)$  indicating a positive effect of the treatment on vocabulary knowledge (Table 2). The mean difference was 25.50 indicating positive impact of CLIL on L2 vocabulary knowledge (Table 2).

**Table 2. Mean difference of the CLIL group**

	<i>Paired Differences</i>		<i>t</i>	<i>Sig. (2-tailed)</i>
	Mean	Std. Deviation		
VocPre - VocPost	25.50	11.33	-11.019	.000

Paired sample t-tests were carried out in order to compare the pre-test – post-test performance of the NonCLIL control group's vocabulary knowledge. The comparison exhibited a significant difference (.008) – (level of significance  $< .05$ ) (Table 3). However, the small mean difference exhibited by the control group was .90 which could be attributed to out of school English language learning experiences. For instance, subjects attended private EFL classes while participating in the experiment so the mean increase could be attributed to L2 word learning outside school.

**Table 3. Mean difference of the NonCLIL group**

	<i>Paired Differences</i>		<i>t</i>	<i>Sig. (2-tailed)</i>
	Mean	Std. Deviation		
VocPre - VocPost	-.90	1.41	-2.939	.008



The word list group also exhibited a significant difference demonstrating a mean difference of 8.66 which was not as great as the mean difference of the CLIL group (25.50) (Table 4).

**Table 4. Mean difference of the Word list group**

	<i>Paired Differences</i>		<i>t</i>	<i>Sig. (2-tailed)</i>
	Mean	Std. Deviation		
VocPre - VocPost	-8.66	7.28	-4.606	.000

The CLIL experimental group outperformed the other two groups in post-test vocabulary scores confirming the hypothesis (Table 5).

**Table 5. ANOVA analysis of the post-tests**

	<i>df</i>	<i>Mean Square</i>	<i>F.</i>	<i>Sig.</i>
Between Groups	2	3760.73	15.279	.000
Within Groups	57	246.14		
Total	59			

Observation data showed that CLIL provides opportunities for deep vocabulary learning strengthening the relationship between the semantic and syntactic form of a word and its morpho-phonological form. More specifically, CLIL activated students' prior knowledge, e.g., they talked about the Amazon forests comparing them with forests they knew. Students were provided with opportunities to learn vocabulary in context, e.g., they learned the words 'flora and fauna' together with the words 'species, plants, jungle, birds, reptiles, amphibians, mammals'. Furthermore, active processing of new vocabulary took place, e.g., pupils looked at maps and searched reading texts to find information about topics and then had to decide whether some statements were true or false, or fill in missing words. Learners were also allowed to recall target words, e.g., through memory games related to content comprehension and language focus activities. In this learning context, students were provided with repeated exposures to the target words. For example, during 2 minutes the teacher said the target word 'tropical' 7 times (lesson 2). The use of linguistic frameworks by the teacher increased the amount of exposures to the new vocabulary. An example taken from the data of this study is: 'Plantation is a big field. It's a very big field. It's a very big cultivated field (cotton, tobacco)'.

## **7. Pedagogical Implications**

In general, findings seem to substantiate the impact of CLIL on content and L2 vocabulary development. CLIL appears to provide increased opportunities for exposing learners to L2 vocabulary knowledge in meaningful situations. Content-based instruction seems to be an authentic approach to language (Celce-Murcia and Olshtein 2000). The positive impact of CLIL is shown in the vocabulary test results which demonstrate that by attaching words to their surroundings, the likelihood of comprehension and retention is increased (Schmitt and Schmitt 1995).

## **8. Limitations**

The current research raises a number of issues requiring further investigation. To begin with, variables such as habits, student motivation and personal exposure to other language learning environments were not controlled in the present study. Certainly, more rigorous research in the area of CLIL is required to corroborate and enhance the present findings and to fill in gaps.

The small sample employed in the study imposes limitations on the interpretations. Both space and time triangulations are required to ensure the validity of this study.

Also, the post-tests administered in this study examined subjects' immediate performance; a delayed test would show whether learning is retained or atrophied over time. Re-testing participants is likely to shed light on the long-term benefits of CLIL.

## **9. Directions for further research**

CLIL could be implemented in subjects other than Geography such as: History, Science and Maths. This would safeguard the generalisability of findings. Moreover, the experimental group's productive vocabulary knowledge and not only their receptive vocabulary could be explored. Equally pressing is the need to explore the optimal conditions of language and content integrated programmes and the kind of instructional strategies being used (Crandall 1993). An observation checklist may need to be developed. Another vexing issue concerns assessment of content-based language instruction. A reliable instrument needs to be developed in order to measure performance.

Although definitive conclusions cannot yet be reached regarding the exact value of CLIL in content and language learning, the results of the present study suggest that the

issue of learning content through a foreign language is a fertile ground for further research.

## 10. Conclusion

The findings presented here may be clarified, added to or altered as the next stage of the research unfolds. However, evidence so far shows that learning content through the medium of the L2 may offer constant opportunities for activating background knowledge, learning L2 vocabulary in context, promoting active processing of new words, recalling target words, being provided with repeated exposures to target words offering incremental learning, and, therefore, effective L2 vocabulary acquisition. The results of this small-scale experiment provide support for learning vocabulary through CLIL.

It seems reasonable to suggest that foreign language learning may proceed more effectively when subject matters are taught by means of foreign language. Kaufman (2004) advocates that the symbiosis of foreign language and content seems to be promising in enhancing foreign language acquisition.

## References

- Celce-Murcia M. and E. Olshtain (2000). *Discourse and context in language teaching*. Cambridge: Cambridge University Press.
- Chapple L. and A. Curtis (2000). Content-based instruction in Hong Kong: Student responses to film. *System* 28: 419-433.
- Coady J. (1997). L2 vocabulary acquisition: A synthesis of the research. In J. Coady and T. Huckin (eds), *Second language vocabulary acquisition*. Cambridge: Cambridge University Press, 273-290.
- Commission of the European Communities (2003). Communication from the Commission to the Council, The European Parliament, the economic and social committee and the committee of the regions. Promoting Language Learning and Linguistic Diversity: An Action Plan 2004-2006. Brussels.
- Council of Europe (2001). *Common European Framework of Reference for Languages: Learning, teaching, assessment*. Cambridge: Cambridge University Press.
- Craig F.I.M. and E. Tulving (1975). Depth of processing and the retention of words in episodic memory. *Journal of Experimental Psychology* 104: 268-284.
- Crandall J. (1993). Content-centered learning in the United States. *Annual Review of Applied Linguistics* 13: 111-126.
- European Commission (2005). Content and Language Integrated Learning (CLIL) at school in Europe. Brussels: The Eurydice European Unit. <http://www.eurydice.org>
- Gramkow K. (2001). Teaching and learning in a second language. <http://www.tl21.nl/finpub.htm>

- Jiang N. (2002). Form-meaning mapping in vocabulary acquisition in a second language. *Studies in Second Language Acquisition* 24: 617-637.
- Kaufman D. (2004). Constructivist issues in language learning and teaching. *Annual Review of Applied Linguistics* 24: 303-319.
- Martin M.A., S.H. Martin and W. Ying (2002). The vocabulary self-collection strategy in the ESL classroom. *TESOL Journal* 11/2: 34-35.
- Mezynski, K. (1983). Issues concerning the acquisition of knowledge: Effects of vocabulary training on reading comprehension. *Review of Education Research* 53: 253-279.
- Nation I.S. P. (1990). *Teaching and learning vocabulary*. New York: Newbury House.
- Nation I.S.P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Nation I.S.P. and J. Coady (1988). Vocabulary and reading. In R. Carter and M. McCarthy (eds), *Vocabulary and language teaching*. Essex: Longman Group Limited, 97-110.
- Radford A., M. Atkinson, D. Britain, H. Clahsen and A. Spencer (1999). *Linguistics. An introduction*. Cambridge: Cambridge University Press.
- Robinson P. J. (2005). Teaching key vocabulary in Geography and Science classrooms: An analysis of teachers' practice with particular reference to EAL pupils' learning. *Language and Education* 19/5: 428-445.
- Rott S. (1999). The effect of exposure frequency on intermediate language learners' incidental vocabulary acquisition and retention through reading. *Studies in Second Language Acquisition* 21: 589-619.
- Schleppegrell M. J., M. Achugar and T. Oteiza (2004). The grammar of History: Enhancing Content-Based Instruction through a functional focus on language. *TESOL Quarterly* 38/1: 67-93.
- Schmitt N. (2000). *Vocabulary in language teaching*. Cambridge: Cambridge University Press.
- Schmitt N. and D. Schmitt (1995). Vocabulary notebooks: Theoretical underpinnings and practical suggestions. *English Language Teaching Journal* 49/2: 133-143.
- Short D. (1994). Expanding middle school horizons: Integrating language, culture, and social studies. *TESOL Quarterly* 28/3: 581-608.
- Stahl S. (1983). Differential word knowledge and reading comprehension. *Journal of Reading Behaviour* 15/4: 33-50.
- Stoller F. L. (2004). Content-based instruction: Perspectives on curriculum planning. *Annual Review of Applied Linguistics* 24: 261-283.
- Stoller F.L. and W. Grabe (1993). Implications for L2 vocabulary acquisition and instruction from L1 vocabulary research. In T. Huckin, M. Haynes and J. Coady (eds), *Second language reading and vocabulary learning*. Norwood J: Ablex, 33-36.
- Van de Craen P. (2001). Content- and language- integrated learning, culture of education and learning theories. In M. Bax and J-W Zwart (eds), *Reflections on language and language learning: In honour of Arthur van Essen*. Amsterdam: John Benjamins, 209-220.
- Van de Craen P., E. Ceuleers, and K. Mondt (2007). Cognitive development and bilingualism in primary schools: Teaching Maths in a CLIL environment. In D. Marsh and D. Wolff (eds), *Diverse contexts – converging goals: CLIL in Europe*. Frankfurt: Peter Lang, 1-14.

- Wesche M.B. (1993). Discipline-based approaches to language study: research issues and outcomes. In M. Krueger and F. Ryan (eds), *Language and content. Discipline- and content-based approaches to language study*. Lexington, Massachusetts: D.C. Heath and Company, 57-82.
- Zimmerman C. B. (1997). Do reading and interactive vocabulary instruction make a difference? An empirical study. *TESOL Quarterly* 31/1: 121-138.