"Comparing the “phrasicon” of teenagers in immersive and non-immersive settings: does input quantity impact range and accuracy?"

Bulon, Amélie ; Meunier, Fanny

ABSTRACT

The present paper falls within the framework of an interdisciplinary project on Content and Language Integrated Learning (CLIL) in French speaking Belgium. The project aims to assess CLIL at the interface of linguistic, cognitive and educational perspectives (Hiligsmann et al. in preparation). In this paper we specifically focus on the acquisition of Dutch and English phraseological units by French-speaking CLIL (immersive setting) and non-CLIL (non-immersive setting) secondary school pupils. Several studies (e.g. Zydatiß 2007; Lorenzo & Moore 2010; Jexenflicker & Dalton-Puffer 2010; Gené-Gil et al. 2015; Martínez 2015; Bulon et al. forthcoming) have been carried out to compare the language proficiency of learners in immersive and non-immersive settings using global measures of complexity, accuracy and/or fluency, typically referred to as CAF (Housen et al. 2012; Norris & Ortega 2009). The present study focuses on the pupils’ phrasicon, i.e. their phraseological lexicon, and reports on two main analyses, viz.: 1) an overview of the phraseological errors (focus on accuracy), and 2) an analysis of the variety/range of the phrasicon (focus on complexity). Since CLIL programs provide more target-like and input-rich environments than non-CLIL programs - and can therefore be considered closer to L1 acquisition because of their inherent usage-based approach - we hypothesize that CLIL pupils have a phrasicon that is both more accurate and more varied than that of pupils in non-CLIL settings. The participants are 5th year French-speaking secondary school pupils in immersive s...

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Comparing the phrasicon of teenagers in immersive and non-immersive settings: does input quantity impact range and accuracy?

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CECL, UCL
Outline

1. Introduction
2. Methodology
3. Results
   and
4. Discussion
1. INTRODUCTION
Main objective: investigate the influence of Content and Language Integrated Learning - and other educational and motivational factors - on the acquisition of an L2 (Hiligsmann et al. 2017)

Subjects (928 pupils)
(= data collection at T1)
(nb: longit.data recently collected)

<table>
<thead>
<tr>
<th></th>
<th>CLIL Dutch</th>
<th>Non-CLIL Dutch</th>
<th>CLIL English</th>
<th>Non-CLIL English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary school pupils (455)</td>
<td>175</td>
<td>71</td>
<td>103</td>
<td>106</td>
</tr>
<tr>
<td>Secondary school pupils (473)</td>
<td>141</td>
<td>114</td>
<td>104</td>
<td>114</td>
</tr>
</tbody>
</table>

Data collected: linguistic tasks (written and oral; free productions and experimental tests), cognitive tests, socio-affective questionnaires, focus-groups interviews, etc.

Our focus: phraseology -> comparison between CLIL and non-CLIL learners:
- differences = ?
- + interplay between cognitive, socio-emotional and pedagogical factors = ?
## Features of CLIL


### Overview of CBI, CLIL, & EMI: Differing Approaches and Goals

<table>
<thead>
<tr>
<th>Criteria</th>
<th>EMI</th>
<th>CLIL</th>
<th>CBI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aims</strong></td>
<td>Content mastery</td>
<td>Dual focus content and language learning</td>
<td>Language learning</td>
</tr>
<tr>
<td></td>
<td>⇒ L2 learning is often incidental.</td>
<td>⇒ language learning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>May have implicit language learning aims</td>
<td>aims are explicit</td>
<td></td>
</tr>
<tr>
<td><strong>Target groups</strong></td>
<td>Nonnative English speakers, native English speakers</td>
<td>Nonnative English learners</td>
<td>Nonnative English learners</td>
</tr>
<tr>
<td><strong>Teaching staff</strong></td>
<td>Subject specialist; sometimes subject specialist and language specialist in collaboration</td>
<td>Language specialist (often in Britain, Japan, South America); subject specialist (often in Europe); team-teaching with both content and language specialists</td>
<td>Language specialist</td>
</tr>
<tr>
<td><strong>Pedagogical approaches and teaching formats</strong></td>
<td>Focus on development of subject knowledge, methods depend on those favored by the discipline and instructor; expert-oriented lecture is likely</td>
<td>Multi-modal interactive and learner centered approaches which support subject content and language learning; team teaching possible</td>
<td>Language learning tasks; methods depend on those favored by the instructor</td>
</tr>
<tr>
<td><strong>The role of language</strong></td>
<td>Language as a tool (vehicular function)</td>
<td>Language as a tool, subject and mediator (for constructing knowledge &amp; sharing expertise)</td>
<td>Language as a subject</td>
</tr>
<tr>
<td>Criteria</td>
<td>EMI</td>
<td>CLIL</td>
<td>CBI</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------</td>
<td>-----------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Expected learning outcomes</td>
<td>Subject knowledge acquisition</td>
<td>Integrated content and language competence development; focus on L2 productive and interactive skills</td>
<td>Language learning outcomes. Content learning is incidental, at a general knowledge level</td>
</tr>
<tr>
<td>Assessment</td>
<td>Students assessed on subject content knowledge</td>
<td>Students assessed on language proficiency / performance and subject content knowledge</td>
<td>Students assessed on language proficiency / performance</td>
</tr>
</tbody>
</table>

*Note: Adapted from Unterberger & Wilhelmer (2011)*
2. METHODOLOGY
• **Initial focus:** all types of phraseological units

• **Overall research hypothesis:**
  
  – since **CLIL** programs in FWB a) provide **greater exposure to target input** (‘intensive exposure programmes’, Muñoz 2012) than traditional L2 learning programs contexts (‘limited-exposure contexts’, Muñoz 2012), and b) aim at **both content and language competence development**

  – we expect the phraseological lexicon (‘phrasicon’) of **CLIL** students to display a **greater range of phraseological units** and to be **more accurate**
• Subjects and data:
  – 90 CLIL and 90 non-CLIL French-speaking EFL learners
  – 5th graders (upper sec. school) : age approx. 16

  – written productions / non-content specific but everyday topics / emails to a friend (holidays or party)
  – CLIL: 29,387 words / NON-CLIL: 23,747 words
Phrasicon: extraction and analysis
A three-step process

**Step 1.** Word clusters extracted using Wordsmith Tools (Scott 2012)

**Step 2.** List of clusters manually checked, pruned and organized per category of phraseme (referential phrasemes, textual phrasemes and communicative phrasemes; see Granger & Paquot 2008)

**Step 3.** Phraseological errors classified on the basis of Thewissen’s (2008) and Hong et al.’s (2001) taxonomies

See handout for a detailed description and illustration of the taxonomies used for the classification of phrasemes and phraseological errors
3a. Results

Range of phrasemes
Frequencies per category - global trends all learners

Referential phrasemes: 4243
Textual phrasemes: 306
Communicative phrasemes: 369

Number of phrasemes produced by all learners per category (total = 4918)
Comparison total number of phrasemes: CLIL > NON-CLIL (p < 0.05)
Comparaison CLIL/NON-CLIL per sub-category

Number of phrasemes produced by CLIL vs NON-CLIL per sub-category

- Lexical collocations (p < 0.05): CLIL 899, NON-CLIL 797
- Compounds (p < 0.05): CLIL 635, NON-CLIL 421
- Grammatical collocations (p < 0.05): CLIL 854, NON-CLIL 560
- Phrasal verbs (p < 0.05): CLIL 46, NON-CLIL 7
- Complex prepositions (p < 0.05): CLIL 89, NON-CLIL 51
- Complex conjunctions (p < 0.05): CLIL 27, NON-CLIL 6
- Linking adverbials (p < 0.05): CLIL 85, NON-CLIL 45
- Speech act formulae: CLIL 134122, NON-CLIL 72
- Attitudinal formulae: CLIL 41
**Illustration: Phrasal verbs**

<table>
<thead>
<tr>
<th>CLIL (13)</th>
<th>wake up; end up; break up; find out; sum up; clean up; pick up; turn out; throw up; go on; come up; go out <em>(with someone)</em>; run away</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-CLIL (2)</td>
<td>wake up; go out <em>(with someone)</em></td>
</tr>
</tbody>
</table>

- Emergence criterion (Pallotti 2007: 366): **a point in time corresponding to the first systematic and productive use of a structure**
- ‘First systematic use’ = a moment in interlanguage development in which there are signs of regular, constant use of the structure
- Strictly speaking, ‘first’ should only apply to longitudinal data (see future work section).
- However, Pallotti (2007: 367) extends the concept of emergence to cross-sectional designs where emergence is seen as:
  - at least **minimal evidence for systematic and productive use** of a structure
  - “whether this level has, chronologically, just been attained or has characterized the interlanguage for a long time cannot of course be established with such data. In this sense, ‘emergence’ means ‘presence’, that is the structure has emerged (at some time) and is now being used systematically and productively.”
The ‘apperceived input-comprehended input-intake-integration-output’ (Gass, 1997) or ‘input-interaction-output’ process (Gass & Mackey, 2006)

- Phrasal verbs in output (learner's overt manifestation of L2 knowledge) may be influenced, i.a., by frequency in input
- In line with recent findings: Nicaise’s 2015 study of teacher talk (native teachers in CLIL vs non-native teachers in non-CLIL settings):
  - 4 to 1 ratio in the relative frequencies of phrasal verbs produced by native teachers during classroom teacher talking time (native teachers display a tendency to resort more naturally to phrasal verbs (Nicaise 2015: 185)).
3b. Results

Phraseological errors
Frequencies per category - global trends all learners

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong choice of preposition (word exists)</td>
<td>105</td>
</tr>
<tr>
<td>Preposition missing</td>
<td>92</td>
</tr>
<tr>
<td>Two separate words instead of one...</td>
<td>56</td>
</tr>
<tr>
<td>Superfluous article</td>
<td>53</td>
</tr>
<tr>
<td>One word instead of two separate...</td>
<td>34</td>
</tr>
<tr>
<td>Wrong choice of words (word does...)</td>
<td>31</td>
</tr>
<tr>
<td>Superfluous dash</td>
<td>28</td>
</tr>
<tr>
<td>Noun used in the plural instead of...</td>
<td>17</td>
</tr>
<tr>
<td>Superfluous preposition</td>
<td>15</td>
</tr>
<tr>
<td>Misuse of item from other lexical...</td>
<td>12</td>
</tr>
<tr>
<td>Article missing</td>
<td>12</td>
</tr>
<tr>
<td>Creation of a deviant verb</td>
<td>12</td>
</tr>
<tr>
<td>Noun used in the singular instead of...</td>
<td>9</td>
</tr>
<tr>
<td>Superfluous items</td>
<td>8</td>
</tr>
<tr>
<td>Missing dash</td>
<td>6</td>
</tr>
<tr>
<td>Superfluous words</td>
<td>5</td>
</tr>
<tr>
<td>Missing dash (compounds)</td>
<td>3</td>
</tr>
<tr>
<td>Wrong word order</td>
<td>2</td>
</tr>
</tbody>
</table>

Total number of errors produced by all learners per category (total = 500)
Frequencies per 200 words - global trends all learners

Total number of errors produced by all learners per category (total = 360)
Errors per 200 words CLIL vs NON-CLIL

Population size: 90
Median: 1.22704005
Minimum: 0
Maximum: 7.21649485
First quartile: 0.49041175
Third quartile: 2.0729115975
Interquartile Range: 1.5824998475
Outliers: 7.21649485 4.73684211

Population size: 90
Median: 1.832167832
Minimum: 0
Maximum: 7.860262009
First quartile: 0.814134344
Third quartile: 3.5918134375
Interquartile Range: 2.7776790935
Outlier: 7.860262009

Data is from: © Population  □ Sample
CLIL: significantly fewer errors

- One-tailed t-test
  - $t$-value -3.56009
  - $p$-value .000238.

- Mann-Whitney-Wilcoxon test

<table>
<thead>
<tr>
<th>$U_A$</th>
<th>5211.5</th>
<th>$P_{(1)}$</th>
<th>0.0005</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Z$</td>
<td>-3.32</td>
<td>$P_{(2)}$</td>
<td>0.0009</td>
</tr>
</tbody>
</table>
Comparison CLIL/NON-CLIL: 3 categories as illustrations

Number of errors produced by CLIL vs NON-CLIL per category

- Wrong choice of words (word exists): 31 (CLIL), 29 (NON-CLIL)
- Wrong choice of preposition (p < 0.05): 21 (CLIL), 56 (NON-CLIL)
- Superfluous article (p < 0.05): 5 (CLIL), 22 (NON-CLIL)
Examples

• Wrong choice of existing word => mostly verbs in lexical collocations and nouns in compounds
  – VERB + NOUN: *fished* a fish, *pass* holidays, *made* fun, had an *argue*
  – compounds: *alcohol* games, *attraction(s)* park, tennis *field*

• Wrong choice of preposition => mostly in grammatical collocations and complex prepositions
  – PREP + NOUN (more in CLIL): *in* the airport, *on* the afternoon/evening
  – VERB + PREP (more in NON-CLIL): think *at*, tell *for*, giving sth *at* sb
  – complex prepositions: *at* the top of

• Superfluous article
  – influence of L1 (French): all *the* night (CLIL), *the* next week (CLIL), all *of the* night (NON-CLIL), all *of the* day (NON-CLIL), *the* last night (NON-CLIL), *the* next year (NON-CLIL), eat *a* barbecue (NON-CLIL)
Grammaticality and acceptability errors (James 2013)

General trend at this stage of the analysis

• **GRAMMATICALITY ERROR**
  = formally inexistent phraseme (very close approximation or no resemblance)
  ex: « She is in love for* him » [with]; « He made a balad* » [went for a walk]

• **ACCEPTABILITY ERROR**
  = formally existing phraseme but inappropriately used in context
  ex: « She participated in the party* » [attended the party] (in reference to the fact that she came to the party but was not actively involved in its organization, etc.)

• Both CLIL and NON-CLIL learners produced more grammaticality errors than acceptability errors
4. DISCUSSION
Re. RANGE

• CLIL learners significantly produced more phrasemes overall, and this in almost all (sub-)categories

• Greater variety in the CLIL group

• No statistical difference was found between the groups regarding:
  ▪ lexical collocations
  ▪ communicative phrasemes (both speech act and attitudinal formulae)
Re. ERRORS

• NON-CLIL learners significantly produced more errors overall

• NON-CLIL learners significantly made more mistakes in the choice of prepositions and the use of articles (overuse)

• Both groups of learners made mistakes in the selection of verbs in lexical collocations and nouns in compounds

• Both groups of learners produced more grammaticality errors than acceptability errors
Future work

- Look at the sub-categories within lexical and grammatical collocations

- Longitudinal data collected now = > further analysis of the data (from emergence to acquisition?)

- Oral data has been collected: comparison speech vs writing

- Ongoing multivariate and regression analyses: cognitive influence, input measures, etc.
References 1/2


Q&A time

• Please contact us

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