Integrating CLIL in Education: Exploring Teachers’ Perceptions toward Using a Dedicated Online Tool

Implantando AICLE en la enseñanza: estudio sobre la percepción de los profesores ante el uso de una herramienta en línea ad hoc

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Abstract
This paper focuses on a dedicated Content and Language Integrated Learning (CLIL) authoring tool and repository of ready-made materials created within the EU-funded CLIL Open Online Learning (COOL) project, CLILstore, and its two integral components: Multidict (a multilingual multiple-dictionary interface) and Wordlink (a tool that allows all the words on a website to become automatically linked to sundry dictionaries in various language pairs). The validity of these tools and a discussion on how teacher training courses that focus on the use of CLILstore can become helpful to develop CLIL skills, and how CLILstore was helpful in achieving this, close the article.

Key words: Content and Language Integrated Learning, CLILstore, Wordlink, Multidict, teacher education.

Resumen
El artículo se centra en la descripción de CLILstore, una herramienta de autor y un repositorio de materiales didácticos para el Aprendizaje Integrado de Contenidos y Lenguas Extranjeras (AICLE), creados a través del proyecto cofinanciado por la Comisión Europea, CLIL Open Online Learning (COOL). Además, se describen los dos componentes integrales de CLILstore, es decir, Multidict (una interfaz multilingüe de múltiples diccionarios) y Wordlink (una herramienta que permite enlazar todas las palabras de una página web a una amplia selección de diccionarios en línea gratuitos). El artículo se cierra argumentando la validez de estas herramientas y postula que los cursos de formación de
profesores en torno a CLILstore pueden ser también de gran utilidad para que los docentes se familiaricen con los conceptos que subyacen a la metodología AICLE, y la aportación de CLILstore a este fin.

**Palabras clave:** Aprendizaje Integrado de Contenidos y Lenguas Extranjeras, CLILstore, Wordlink, Multidict, formación de profesores.

**1. INTRODUCTION**

CLIL, the acronym for Content and Language Integrated Learning, was launched in 1996 by UNICOM, University of Jyväskylä (Finland), and the European Platform for Dutch Education, and was recognized as a teaching methodology by the European Commission in its Communication No. 449 on Promoting Language Learning and Linguistic Diversity: An Action Plan 2004 – 2006, published in 2003. Throughout these years we have witnessed how CLIL has steadily rooted its teaching principles and is slowly becoming a dominant methodology in all sectors of education that are sensitive to bilingual education. Research and reflective practice literature is currently abundant and CLIL is being the focus of an increasing amount of empirical studies proving the methodology’s worth (Gimeno, Dónaill and Andersen 107).

As Marsh, Marsland and Stenberg (Integrating Competencies for Working Life 2) put it “CLIL is an educational approach in which non-language subjects are taught through a foreign, second or other additional language”. As described by Darn (“Content and Language Integrated Learning (CLIL): A European Overview” 2), “the theory behind CLIL has foundations in interdisciplinary/cross-curricular teaching which provides a meaningful way in which students can use knowledge learned in one context as a knowledge base in other contexts.” Non-linguistic content is used to teach a foreign language and students acquire new knowledge through the medium of that language. No doubt, however, students must have some basic knowledge of the language they are learning in order to understand the content at an acceptable pace, within a particular context, and a basic understanding of the topic in their native language. Because the aim of a CLIL class is primarily the subject matter and the foreign language is secondary, despite it being a crucial pillar, students perceive the completion of language learning activities in a different light because the activities relate to the subject matter at hand and are therefore not devoid of context and meaningfulness. They gain meaning through being useful for a particular goal, that of understanding, exploring, and acquiring new knowledge relating to the subject matter. One could argue, however, that there is a narrow
line between insufficient knowledge of the foreign language (FL), a fact that could lead to a breakdown in learning content, and having sufficient knowledge of the FL to delve into the content whilst simultaneously practising and improving proficiency in the FL.

There is little evidence, however, to show that the comprehension of content is impeded by lack of language competence; a student could very well engage in extensive reading and understand the meaning of the text and yet have a poor knowledge of the foreign language. If we take a technical text as an example, vocabulary is no doubt a key element so, if a student is capable of understanding the technical vocabulary in the text, s/he should be able to comprehend the general meaning of that text. Bearing this premise in mind, a consortium of European universities set about to create a tool that could help learners in their quest to learn content through the medium of a foreign language and facilitate this dual intake by providing elements to aid in scaffolding both content and language learning. The said tool, known as CLILstore, is described in the following section.

CLILstore was designed bearing in mind a number of generally agreed principles underlying CLIL (“Content and Language Integrated Learning (CLIL): A European Overview” 2), which can be summarised as follows and which are constant reminders that learning takes place through language:

- Language is used to learn and communicate (receptive and productive skills).
- A CLIL lesson should combine content, communication, cognition, competences, and a sense of community.
- Language is functional and is adapted to the subject.
- Language is approached lexically.
- Grammar remains in the background.
- Learning styles are taken into account in task types.

Thus, the concept of CLIL resembles teaching Languages for Specific Purposes, integrating all four language skills; however, the former does not necessarily include explanations relating to the language itself, but simply involves understanding and being able to produce the foreign language. A CLIL lesson framework could therefore be based on reading or listening comprehension texts and activities associated to the organisation of knowledge and textual processing. The subject specialist need not explain language structures or correct language inaccuracies as it is not his or her task; communication in this context is far more important than fluency or accuracy. Both content and language teachers should combine activities that are appropriate for that particular discipline with language learning exercises in order to balance knowledge intake. The subject specialist
should be able to exploit opportunities to develop language skills as well as improving the acquisition of content, and vice versa (Carrió Pastor and Gimeno Sanz 106).

Although subject and language specialists have to work very closely in designing materials that are appropriate for the CLIL classroom and, subsequently, invest a large amount of time in doing so, we firmly believe that the advantages outweigh the burdens. Very briefly, these advantages can be summarised in the following ideas (Darn 3):

- CLIL introduces a wider cultural context.
- CLIL prepares students for international activities and exchanges.
- CLIL gives access to international certification.
- CLIL improves general and specific language competence.
- CLIL prepares for professional life and provides more job opportunities.
- CLIL develops multilingual interests and attitudes.
- CLIL increases student motivation to learn a second or even a third language.

Several recent studies claim that CLIL is a source of motivation for students (Navarro Pablo & García Jiménez 87; Doiz, Lasagabaster & Sierra 221; Sylvén & Tompson 31) despite the fact that in a CLIL environment what is sought is ideally long-term retention of both the subject matter under study and the foreign language through which that subject is being taught. Students are required to process information relating to and arising from two different channels of input (subject matter + FL), merge the two channels into a single coherent signifier, and then mentally process the resulting combined/dual input into meaningful data. Figure 1 illustrates this mental process (Gimeno Sanz 84).

![Figure 1. A CLIL learner’s mental process](image-url)
2. THE CLIL OPEN ONLINE LEARNING PROJECT

In line with this trend, the EU-funded CLIL Open Online Learning (COOL) project (2018-2021) has redeveloped and redesigned CLILstore, an online authoring tool to support the implementation of CLIL. CLILstore is built on 2 complementary tools, that is, Multidict and Wordlink. Both tools can function as stand-alone resources or within the CLILstore system. Multidict is a multilingual dictionary interface allowing quick monolingual or bilingual searches in over 100 language combinations. Wordlink is an interface that can link most webpages word-by-word to a selection of high quality free online dictionaries; it is the software which facilitates the automatic linking of every word in embedded texts within CLILstore learning units and supports learners who wish to easily consult online dictionaries as they read through webpages.

CLILstore’s features are particularly enhanced when videos and their transcripts are embedded into the system from one of the many streaming video applications currently available, such as TED Talks or Khan Academy, which offer abundant educational materials in various languages. Because the use of the tool is subject to “CopyLeft” rights, this means that the units and activities created within CLILstore become part of an ever-growing repository that is made freely available to the CLIL and language learning community at large, for learners and teachers alike. In addition to briefly describing how the tool works, the last section presents data collected through a survey conducted with experienced teachers from several European countries who attended a training course on the use and implementation of CLILstore in secondary education.

Figure 2. CLILstore entry page

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1 CLILstore was first launched as a result of the Tools for CLIL Teachers project (Ref. 517543-LLP-1-2011-1-DK-KA2-KA2MP).
2.1. CLILstore, Multidict and Wordlink

CLILstore is a very simple, yet extraordinarily powerful, authoring tool that allows teachers to create materials based on the integration of streaming video embedded from external sources, any wealth of multimedia elements, links to additional sources and uploaded files, as well as a repository of existing materials. The materials that are readily available in CLILstore amount to over 4000 units, covering all 6 proficiency levels (A1 to C2) of the Common European Framework of Reference for Languages (CEFRL) in 68 different languages, and spread over sundry specialised topics (statistics, history, art, economy, biology, chemistry, etc.).

As we can see in Figure 3, the main menu page allows us to select learner or teacher mode, language and level, search for specific units, as well as a number of additional search features such as the type of media included in a unit, author, title or topic of unit, the number of views and likes a unit has attracted, and so forth.

Figure 4 illustrates a view of a unit once it has been selected. It includes an embedded video sequence from YouTube and some comprehension questions. By virtue of Wordlink, all the words in the unit have become automatically linked to a myriad of online monolingual and bilingual dictionaries in different language pairs. In the image we can see that the word “obsolescence” has been clicked on, triggering the Multidict dictionary.
interface to appear on the right-hand side of the screen. Here we can see the search criteria for the word being looked up: (1) the source language, (2) our selected dictionary, and (3) the target language for our translation. The author of the unit will have already indicated the source language, so this determines the base language in Multidict. The learners can select the language they wish the search term to be translated into, or if they select e.g. English to English they can perform a monolingual consultation. Without having to re-enter the search term, the user can quickly switch between dictionaries using the drop-down menu of available sources (Gimeno, Ó Dónaill and Zygmantaite 12).

Figure 4. The view of a unit in CLILstore

2.2. The Multidict dictionary interface

In a typical situation where a CLIL student is reading an online article in a foreign language, he or she is very probably going to have to look up the meaning of one or more words. That student will start by opening a new tab, then search for a dictionary, type or paste in the word they need to look up, only to realise that it cannot find the word they are looking for. They end up having to start from scratch, spend time searching the web for another free online dictionary and start the process of typing or copying and pasting the word again. By the time they have finished doing this, and maybe found the translation they were looking for, they may have forgotten the context in which the word was used, so they start reading the text from the beginning in order to find their bearings. With the Multidict function, this is no longer necessary. At the touch of a button students have access to online dictionaries in over 100 languages, which have been gathered into a single search engine. This gives them quick and easy access to the best dictionaries available on the internet. Multidict can be used as a standalone regular dictionary by
simply typing in the word to be translated or defined, but it also provides immediate
access to a wealth of monolingual and bilingual dictionaries should the first search result
not be satisfactory.

When used within CLILstore, however, the Multidict interface is automatically linked to the
text the learner is reading. This means that the hassle of having to type in a word to find its
meaning is no longer necessary. Language learners can simply click on the word and the
translation will pop up on the right-hand side of the screen (in default mode). If the word
cannot be found, then all they will have to do is choose a new dictionary from the drop-
down list. This will save them a considerable amount of search time and make the reading
experience easier and smoother, whether they are working on a computer or a mobile
device.

There are numerous dictionaries to choose from; some are useful to look up general words
and others are more appropriate for specialised fields. For example, the IATE database is a
very useful tool if one is working with EU-specific terminology, but it also comes in very
handy if one is looking for technical words or terms within most vocational subjects.
Another example is the howjsay.com dictionary, which is an audio dictionary of English
pronunciation. This is particularly helpful for beginners or for the user who is unsure of
the pronunciation. There is quite an array of dictionaries to choose from although the
number varies from language to language.

The types of users who benefit the most from using CLILstore are most often users who
have some basic knowledge of the target language. This means that at least a B1 reading
level is advisable, especially when working with authentic material. The user who needs to
look up every second word will not find many advantages. However, a user who is at a B2
level will be able to successfully read and understand a text that normally requires a
C1/C2 level and in a considerably shorter amount of time compared to reading the text
without Multidict. A2 level readers who aspire to move to a B1 level will also benefit from
this tool. One of the advantages of Multidict, and CLILstore alike, is that the reader can be
exposed to material at a higher level of difficulty. This pushed input with the added
support of Multidict aids the reader in the successful completion of a class assignment or
task.

3. METHOD

In order to validate CLILstore and its integral modules, Multidict and Wordlink, and to
determine a) to which extent training courses focusing on the use of CLILstore can become
helpful to develop CLIL skills, and b) to which extent CLILstore was helpful in achieving
this, project members participated in a European-wide teacher training course and conducted a survey based on pre-course and post-course opinion questionnaires² Thirty practising teachers participated in a two-week teacher training course conducted entirely in English. Only 22 of them completed the pre-course questionnaire and 27 completed the post-course questionnaire. In the following sections, we shall only refer to a small number of questions focussing on the participants’ motivations to enrol on the course, their prior knowledge about CLIL, the level of confidence to apply CLIL after taking the course, perceived risk factors preventing them from applying the methodology and, lastly, how useful they thought the CLILstore system was in terms of designing CLIL materials for their own subject.

4. PARTICIPANTS

The participants consisted of 30 secondary school teachers (20 female and 10 male) from 9 different European countries³ teaching subjects ranging from Electronics, Telecommunications, Computing and ICT to Geography, History, Science, Music and Art. 77.3% (17) of them were between the 31 to 50 age range, plus 2 (9.1%) between 20 and 30 years of age, 9.1%), and 3 (13.6%) aged between 51 and 60. They all held certificates to accredit a B2 level or higher of English proficiency, taught students within the A2+ / B1 range, and were expected to help them achieve a B2 level in their second language. Their computer literacy was mixed: basic (5), intermediate (11), and advanced (6). When asked what their motivations had been to enrol on the course (see Figure 5), 62.5% reported they had done so to broaden their professional development; a further 21.9%, because of local institutional or school needs, and 9.4% owing to a professional requirement in their country. These percentages clearly indicate that it was basically for personal reasons that these teachers were driven to explore new teaching approaches, most likely hoping to improve their professional status.

² Parts of this study were previously published in Gimeno-Sanz, Ana, Ó Dónaill, Caoimhín, and Andersen, Kent. “Supporting content and language integrated learning through technology.” CALL Design: Principles and Practice-Proceedings of the 2014 EUROCALL Conference, Groningen, Research-publishing.net, 2014, pp. 107-112. Research-publishing.net. doi:10.14705/rpnet.2014.000203.

³ Italy (9); Spain (11); Estonia (3); Austria (2); France (1); Hungary (1); Portugal (1), and Romania (1).
5. DISCUSSION

In the initial questionnaire, the questions were geared towards disclosing the participant's profile and prior knowledge about CLIL, their readiness to adopt such a methodology and their attitude towards using ICT in their teaching practice. Question 15, “Indicate your level of familiarity with CLIL prior to the course” unveiled a general lack of awareness regarding the theories underlying CLIL and the practicalities involved in adopting this methodology, lack of knowledge as to ICT resources that are available to support the teacher and a tendency to use practices firmly grounded on a teacher-centred approach, as reflected in Table 1.

Table 1. Level of familiarity with CLIL prior to the course.

| 15) Indicate your level of familiarity with CLIL prior to the course |
|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                           | 5 High | 4 High | 3 High | 2 High | 1 Low | Responses | Average Score |
| Stating learning outcomes for language and subject | 5 (22.73%) | 4 (18.18%) | 4 (18.18%) | 1 (4.55%) | 8 (36.36%) | 22 | 3.14 / 62.80% |
| The 4 Cs of CLIL | 3 (13.64%) | 3 (13.64%) | 5 (22.73%) | 2 (9.09%) | 9 (40.91%) | 22 | 3.50 / 57.00% |
| The importance of multimodality | 3 (13.64%) | 4 (18.18%) | 7 (31.82%) | 5 (22.73%) | 3 (13.64%) | 22 | 3.05 / 56.10% |
| Teacher-centred vs Student-centred learning | 5 (22.73%) | 6 (27.27%) | 4 (18.18%) | 3 (13.64%) | 4 (18.18%) | 22 | 2.77 / 55.40% |
| Use of technology to adapt language input | 1 (4.55%) | 2 (9.09%) | 5 (22.73%) | 8 (36.36%) | 6 (27.27%) | 22 | 3.73 / 57.60% |
| Use of technology for scaffolding | 2 (9.09%) | 4 (18.18%) | 3 (13.64%) | 8 (36.36%) | 5 (22.73%) | 22 | 3.45 / 59.00% |
| The importance of pushed input & pushed output | 2 (9.09%) | 6 (27.27%) | 6 (27.27%) | 5 (22.73%) | 7 (31.82%) | 22 | 3.24 / 64.83% |

The final survey intended to collect data regarding their level of confidence in applying a number of CLIL attributes in their teaching, the degree to which they thought CLIL relies
on ICT, whether they perceived any risk factors that could prevent them from implementing CLIL in their teaching practice, and their perception of learner-centred versus teacher-centred approaches, after having completed the two-week course.

Regarding their opinion of the CLIL concept in general after completing the course, the entire class was favourable of applying this methodology in their teaching. The following are a few comments that we think are worth mentioning because they summarise the overall impression:

- The CLIL methodology is useful to improve the students’ motivation in learning because it involves the use of different means of communication and it integrates a wide variety of pedagogical methodologies. The lessons built in this way are more interesting for students.
- [CLIL] is a new methodology based on multimodality and scaffolding, which is very useful.
- In my opinion CLIL is a good method to transfer content and language, even if you have to create all your lessons and it is a big job.
- I think CLIL is a very ambitious concept. If it works, it is perfect for the students but I think it takes a lot of time for CLIL to work with students, and it takes a lot of time for teachers to prepare lessons.

From these comments we can elicit several conclusions that were, in general, common to the whole group: a) teachers perceive CLIL as a means of motivation for students because it involves using multiple approaches to teaching; b) it assimilates multimodality in learning, and c) it caters for a variety of learning styles. As can be seen, the main drawback is related to the amount of extra work and time that must be invested in preparing suitable lessons in order to adapt their subject matter to the CLIL methodology.

Regarding the degree of confidence in applying CLIL after taking the course (Q2), 48.15% state that they are confident and 18.52% state that they are very confident in developing learning outcomes for both language and subject matter. If we consider the sum of these two statements, over 65% of the participants perceive CLIL as an optimal methodology to teach both content and language. The participants’ confidence to provide multimodal input and distributing it evenly across their CLIL units increased to levels of very confident (48.15%) and confident (40.74%), adding up to nearly 90%.
The teachers were also wary of a number of risk factors that could prevent them from integrating what they had learnt during the course into their teaching practice. These are listed in Figure 6. As we can see, there is no one solid reason but several that could impede them from integrating a CLIL teaching model within their schools. 25.6% (11) saw the lack of access to technology in the classroom as the main impediment, followed by 20.9% (9) who claimed that lack of support from their institutions could very well hinder their intention to adopt a CLIL methodology. Six of the respondents (14%) regretted not receiving encouragement from colleagues to try new methods in the classroom, as well as 9.3% (4) who feared that students would be reluctant should they decide to adopt a new teaching approach. All of these reasons refer to external challenges being perceived as a threat but another 4 responses (9.3%) reported a personal reason, that is, lack of confidence in their personal IT skills, which is perceived as an indispensable quality to have when embracing a CLIL methodology.
Some of the respondents elaborated on their answers that, on the whole, can be summarised in the following explanation where we can see that teachers are under pressure to integrate innovative teaching methods with scarce institutional support and institutions relying on their staff members’ own initiatives and motivations. Schools, quite probably also receive pressure from local or national educational authorities, which could in turn be responding to common European Union directives (such as the European Commission Communication No. 449 on Promoting Language Learning and Linguistic Diversity mentioned above).

Institution are sending letters announcing new methods to implement but they do not provide practical training and clear target to reach. So I am here just because I heard about CLIL and I wanted to know more about it. But I think a project like CLIL cannot be left on personal initiative.

Self-confidence in being able to incline the balance towards student-centred learning rather than teacher-centred learning was another of the attributes where the course had helped participants gain assertiveness: very confident (33.33%) and confident (51.85%), adding up to a total of 85% of the participants. Additionally, 77.8% of the respondents claimed that the introductory course on CLIL and the use of CLILstore had changed their views on teacher-centred versus learner-centred learning and provided the following explanations:

- Students should be more involved in their learning.
- Yes, I will try to apply more student-oriented education.
• In Italy the widespread methodology is teacher-centred; so I have learnt different ways of teaching and, in the end, a dramatic change in the way of thinking and planning lessons.

• The tools that I have learnt are very interesting, but it is necessary to employ a lot of time to build the lesson, because in my case there are very few existing materials. And it is a huge effort to create the material in English.

• Using these tools changed my views on learning-centered approaches.

As we can see, in a number of cases, the course encouraged teachers to change their focus from teaching to learning and their will to incorporate methods to support the learner and increase their involvement in the process despite the amount of work that creating ad-hoc materials may imply in areas where there are fewer ready-made resources available.

Regarding how reliant CLIL is on ICT, again the views of the respondents coincided considerably. 29.63% stated that CLIL relied on ICT very strongly and 55.56%, strongly, adding up to over 85% of the group. 11.11% were neutral, and a mere 3.70% disagreed entirely and thought that CLIL could be put into practice independently of ICT. One of the respondents commented that CLIL “is not NECESSARILY reliant [on ICT]. There are lots of things that can be done without it, especially Wordlink as it just helps to understand a text, it doesn’t teach understanding skills.”

When asked about the usefulness of the CLILstore system to design units for CLIL in their own subject, nearly 85% of the respondents rated it as high or very high. Multidict and Wordlink were also highly regarded, with just over 85% and 70% of the participants, respectively, believing these tools met their needs in terms of supporting CLIL.

Table 3. Extent to which training in using Clilstore (Multidict and Wordlink) met teachers’ needs

<table>
<thead>
<tr>
<th>Tool</th>
<th>5 High</th>
<th>4 High</th>
<th>3 High</th>
<th>2 High</th>
<th>1 Low</th>
<th>Responses</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multidict</td>
<td>15 (55.56%)</td>
<td>8 (29.63%)</td>
<td>4 (14.81%)</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>27</td>
<td>1.59 / 5 (31.80%)</td>
</tr>
<tr>
<td>Wordlink</td>
<td>14 (51.85%)</td>
<td>5 (18.52%)</td>
<td>8 (29.63%)</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>27</td>
<td>1.78 / 5 (35.60%)</td>
</tr>
<tr>
<td>Clilstore</td>
<td>9 (33.33%)</td>
<td>13 (48.15%)</td>
<td>3 (11.11%)</td>
<td>2 (7.41%)</td>
<td>0 (0.00%)</td>
<td>27</td>
<td>1.93 / 5 (38.60%)</td>
</tr>
</tbody>
</table>

One of the general remarks—which can be summarised in the following opinion: “It is necessary to have a global planning to state the main principles and practice of CLIL in Europe. It is not a good idea that each teacher uses CLIL as they consider the best way”—points, in our view, to one of the key factors that can cause teachers to hesitate to put CLIL
into practice, i.e., the fact that subject specialists need well-developed methodological guidelines to support the implementation of CLIL in the classroom and the backing of language specialists to provide support in terms of foreign language learning.

6. CONCLUSIONS

CLILstore, like any other technology or resource used needs to address a particular pedagogical need. Considering that the basic elements of a CLIL lesson include exposure to input, meaning focussed processing, form focussed processing, output production and the use of strategies, CLILstore has been designed to facilitate this type of teaching and learning; however, factors such as learning environment, learner need, curricular demands and desired learning outcomes must also be taken into account (Ó Dónaill 21). Evidence drawn from the post teacher training course survey leads us to believe that a) teachers are willing to adopt CLIL in their classes and to collaborate with language specialists to put this dual-focus methodology into practice; and b) CLILstore is perceived as a useful tool to create, publish and deliver learning materials that aid in conducting dual-focussed teaching by supporting content learning as well as foreign language learning.

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