Online CLIL Scaffolding at University Level: Building Learners' Academic Language and Content-Specific Vocabulary Across Disciplines Through Online Learning

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Abstract. Over the last two years, the University of Urbino, Italy, has been implementing Content and Language Integrated Learning (CLIL) courses in English across all disciplines. This study focuses on the online self-study CLIL scaffolding designed to help students involve in an Internationalization Project to build academic language and content-specific vocabulary autonomously. Within a CLIL counterbalanced instructional framework, which integrates content-based and form-focused instruction as advocated by Lyster (2007), learners' awareness and acquisition of English academic language and subject-specific terminology have been promoted by means of online course-tailored activities delivered through self-access materials. The profile of the 21st century digital-age university learner has had a deep impact on the instructional design of the online CLIL learning environment implemented. Noticeably, the online self-study materials have been created using corpus- and web-based tools aimed to cater to CLIL learners' cognitive, subject-specific, and language needs. Activities have been set up to engage learners in active learning and to trigger students' self-directed learning processes effectively. Online out-of-class academic and content language scaffolding, informed by sound foreign language acquisition research and pedagogy, have been enhanced.

Keywords: CLIL, technology-enhanced learning, corpus-based tools, autonomous learning.

1. Introduction

The University of Urbino, Italy, has been implementing an Internationalization Project since the 2010-2011 academic year. The project aims to foster multilingualism and student mobility in higher education. To achieve these objectives, Content and

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Language Integrated Learning (CLIL) courses have been taught in English across all departments in the last two academic years.

2. Theoretical framework

2.1. The CLIL approach

The CLIL approach entails teaching subject-specific content through a foreign language: "Content and Language Integrated Learning (CLIL) is a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language. That is, in the teaching and learning process, there is a focus not only on content, and not only on language" (Coyle, Hood, & Marsh, 2010, p. 1). In particular, the CLIL approach features four main components: "content (subject matter), communication (language learning and using), cognition (learning and thinking processes) and culture (developing intercultural understanding and global citizenship)" (Coyle et al., 2010, p. 41).

As advocated by Lyster (2007), to scaffold learners' content knowledge and foreign language acquisition, the CLIL counterbalanced instructional framework integrating content-based and form-focused instruction in both proactive and reactive forms (pp. 134-135) has been implemented in this University of Urbino-based project: "Content-based instructional options include: (a) techniques that teachers employ to make subject matter comprehensible to second language learners; (b) opportunities for students to use the second language to mediate content learning during academic tasks; (c) negotiation replete with questions and feedback employed by teachers to scaffold verbal exchanges with students in ways that ensure their participation and appropriation of the targeted content. […] Form-focused instruction refers to 'any pedagogical effort which is used to draw the learners' attention to language form either implicitly or explicitly" (Spada, 1997, p. 73 cited in Lyster, 2007, pp. 43-134). Specifically, a CLIL blended learning model combining technology-enhanced activities and face-to-face classroom instruction has been developed. To this purpose, a password-protected *CLILlearning* website accessible also from mobile devices has been created with *Weebly*, a free website builder. The online learning objects have been devised to foster students' awareness and development of academic language and content-specific vocabulary, which are likely not to be the focus of face-to-face classroom practices. Noticeably, one of the main objectives of CLIL instruction is to promote the acquisition of "content-obligatory language [which] includes technical vocabulary and other domain specific expressions" (Lyster, 2007, p. 28). Likewise, the development of academic language is pivotal in CLIL settings where students consistently engage with academic discourse.

In the online CLIL learning environment, proactive form-focused instruction in terms of academic language and subject-specific vocabulary has been implemented: "Proactive form-focused instruction involves pre-planned instruction designed to

enable students to notice and to use target language features that might otherwise not be used or even noticed in classroom discourse" (Lyster, 2007, pp. 44-45). Online academic and content language learning has been designed mainly in a self-study mode. Autonomy is a core tenet in CLIL instruction. Marsh, Mehisto, Wolff, and Frigols Martín (2010) advocate "Learner autonomy and agency – Deciding on and managing one's own learning" (p. 34). Active, strategic and self-directed learning has been enhanced in the customized online CLIL learning environment in keeping with Pedagogy 2.0: "The challenge for educators is to enable self-direction, knowledge building, and learner control by providing options and choice while still supplying the necessary structure and scaffolding" (McLoughlin & Lee, 2008, p. 17).

3. Online academic language and subject-specific vocabulary learning

Within a counterbalanced instructional framework, students are introduced to the Academic Word List (AWL) devised by Averil Coxhead through a tutorial uploaded on the CLIL website: "The AWL […] offers a 'fingerprint' of written academic vocabulary, the common core items which make it different from other types of writing. Most fruitfully, focusing on AWL in vocabulary teaching and learning offers the possibility of increasing comprehension of academic text far more rapidly and efficiently than through just enlarging one's general vocabulary" (O'Keeffe, McCarthy, & Carter, 2007, pp. 198-199). To enhance learners' awareness of the instructional value of subject-specific terminology, word clouds displaying the most common content words and clusters featured in students' English course reading materials are embedded in the CLIL website. The statistically-based data used to create word clouds are retrieved through *AntConc*, free concordancer software program.

To meet students' needs effectively, online tools and activities are tailored to learners' CLIL course materials. To enable students to identify the academic and content-specific vocabulary targeted in their CLIL lessons autonomously, corpus- and web-based tools are introduced through tutorials uploaded on the CLIL website. Learners can use the *Vocabulary Profiler* (VP), free online software, to analyze English academic texts. The VP runs the General Service List and AWL. Moreover, the VP produces an off-list featuring mainly content-specific words. To retrieve the vocabulary profile of the assigned English reading materials, students can paste the targeted texts into the box provided. The data retrieved show the percentage of the words belonging to the three lists. Through a color-coded system, learners can visually access the distribution of the vocabulary belonging to the three lists across the texts processed. To further promote learners' awareness about academic and content-specific language in a self-directed learning perspective, *Word and Phrase – Academic*, implemented by the *Corpus of Contemporary American English*, is introduced. Students can paste English academic texts into the box provided and select the subject-specific content of the targeted texts. The texts processed display

academic and content-specific words through a color-coded system; learners can thus visualize the vocabulary items belonging to the two lists. Furthermore, learners can click on any color-coded academic and content-specific word to retrieve concordances and thus identify collocations. To analyze English study materials, learners can also paste their English reading materials in *WordSift* to obtain word clouds displaying the fifty most frequent vocabulary items featured in the texts. Academic words can be highlighted; the process is supported by Coxhead's AWL. Learners can also have Social Studies, Language Arts, Science, and Math words highlighted.

Gap-fill academic and discipline-specific language-focused exercises are made available on the website. Free AWL Highlighter software of Nottingham University is used to identify and boldface the academic words featured in English course reading materials. The frequency level of academic words* that best suits students' competence in English is selected. The HTML text generated features all the targeted academic words in bold. Interactive gap-fill exercises are then created with *Learnclick,* online software. English assigned readings are pasted into the box provided. The academic words identified with AWL Highlighter software are manually selected. Drop-down or drag-and-drop answer choices are generated. The HTML gap-fill exercises thereby created are embedded in the website. Learners can check their answers and decide to have the solutions displayed. Moreover, through the concordancer and corpus-based tools mentioned thus far, subject-specific vocabulary items are identified in English reading materials. The corpus-retrieved data are used to create course-tailored interactive *Learnclick*-generated gap-fill exercises zeroing in on content language; the exercises are embedded in the website.

Learners can also study key discipline-specific words through technology-enhanced activities created with *Word Dynamo*, a free web-based tool for creating matching activities and flashcards where content vocabulary items and their definitions can be accessed in the written and audio mode. Embedded in the website, *Word Dynamo*-generated exercises work as pre-listening activities. Noticeably, English content-specific reading materials are made available through podcasts that students can download and listen to on the move. While listening, text- and image-based multiple-choice activities are created with *Quipper*, a free online quiz app which allows learners to carry out activities on the go with mobile devices. Students can save their place in a quiz and review quizzes they have already taken. Furthermore, course-tailored interactive crosswords focusing on subject-specific concepts are created with *ProProfs*, a free web-based tool, and embedded in the website. Crosswords are devised to be used as post-listening activities.

* "the Academic Word List […] is divided into 10 sublists in order of frequency" http://www.nottingham.ac.uk/~alzsh3/acvocab/wordlists.htm

Tasks requiring learners to create cooperatively in English and share course-tailored content-specific end-user generated knowledge are provided. To this purpose *EduGlogster*, a free online collaborative platform for creating interactive multimedia-rich posters, is used. As Pedagogy 2.0 holds: "Students are capable of creating and generating ideas, concepts, and knowledge, and it is arguable that the ultimate goal of learning in the knowledge age is to enable this form of creativity and productivity" (McLoughlin & Lee, 2008, p. 17). Students are provided with feedback on the written and video output by English language specialists. Learners are also required to produce and embed in interactive glogs podcasts in English created with *SoundCloud*, a free web-based and mobile audio-recording tool. English native-speaker experts provide learners with private feedback on their English oral output inserting comments in specific points along the *SoundCloud*-generated audio track waveform. When students play the track, comments pop up. Learners can reply to comments if they so desire. Reactive form-focused instruction, that is "corrective feedback […] draw[ing] learners' attention to language features in relatively unplanned and spontaneous ways" (Lyster, 2007, p. 47), is thus enhanced even though not in real time; corrective feedback is pivotal in vocabulary acquisition: "a reactive approach is ideal for pushing students in their lexical choices" (Lyster, 2007, p. 47).

4. Conclusions

The online course-tailored scaffolding provided to CLIL learners has been implemented within a metacognitive framework. Students are encouraged to take responsibility for their own learning process. Moreover, learners can decide when and how to use the resources provided. Personalized learning is enhanced. Overall, students are enabled to engage effectively in academic and discipline-specific vocabulary learning through online self-directed study.

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AntConc: http://www.antlab.sci.waseda.ac.jp/software.html
AWL Highlighter: http://www.nottingham.ac.uk/~alzsh3/acvocab/awlhighlighter.htm
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Word Dynamo: http://dynamo.dictionary.com
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