

Online Scientific Language Teaching and Web 2.0

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Abstract. This presentation examines the application of Web 2.0 to an online scientific language course. The online Computer Science English Course (CSEC), funded by a national PRIN project and targeted to students enrolled in the undergraduate course in Applied Computer Science (ACS) at the University of Urbino – Italy, aims to promote the acquisition of applied computer science micro-language. The CSEC aspired to a CEFR B1/B1+ level of competency in reading, writing, grammar and vocabulary skills. The innovative element was its foundation on a blog, posted regularly by a senior bilingual student attending the university ACS course while in the US for an internship. Tested during the experimental phase of the project (2007-08), the course has been recently augmented in order to develop the oral skills which were not sufficiently practised and to create more personal teacher-student and peer relationships. Web 2.0 tools have been used to enhance learners’ English professional oral language skills in an engaging learning environment. The decision to implement Web 2.0 was also influenced by the targeted students’ interests in information and communication technology (ICT). Student motivation therefore played an important role in the design and implementation of the new activities aimed to encourage an autonomous active learning of the foreign language (FL). The implemented version of the course will be offered to the first year students of the 2012/13 academic year enrolled in the distance-learning degree programme in ACS. New interaction modes will be fostered to cater for collaborative learning and knowledge building by means of web 2.0 social spaces (Bates, 2011) and through constant tandem learning organized with other ACS English speaking students

Keywords: distance and collaborative learning, EFL teaching, scientific English.

1. Introduction

The online computer science English course, funded by a national PRIN project and targeted to students enrolled in the undergraduate course in applied computer science at the University of Urbino - Italy, aims to promote the acquisition of applied computer science micro-language.

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The course is part of a broader research project which combines the CLIL approach (Content and Language Integrated Learning) and Computer-Mediated Learning within the context of university instruction. The above-mentioned degree course is offered in two versions: via classroom instruction in the students' mother-tongue language, and online in the English language (<http://e-learning.sti.uniurb.it>).

To provide the online instruction group with adequate support, the existing didactic materials were revised and adapted to the CLIL approach and an English course was created to foster active use of scientific micro-language in the field of ACS. The online CSEC mainly focused on building reading, writing, grammar and vocabulary skills related to the specific needs of ACS students and it was founded on a blog which was regularly posted by a senior, bilingual ACS student, Bob, doing his internship in the United States. The blog-inspired content was highly motivating for our students and the activities suggested met their needs and interests but it also required constant revision. Therefore, three years later, the syllabus has been re-elaborated, adapting its content to develop the oral skills which were not sufficiently practised and to create more personal teacher-student and peer relationships. The new version of the online CSEC is enriched with additional activities based on Web 2.0 tools and new interaction modes included collaborative learning and knowledge building (Harasim, 2011).

2. Method

2.1. Course structure

The CSEC aspires to a CEFR B1/B1+ level of competency in the written skills. Each of the 20 units consists of four activity areas, namely: *Warm up*; *Application*; *Language notes*; *My contribution*. The first two areas, including listening and reading materials with relative exercises, introduce the topic of the unit and offer the opportunity to develop it by adding details. The third area consists of grammar and vocabulary notes completed with activities referred to standard English supplemented with Computer Science micro-language; while in the last section (*My contribution*) students are invited to produce short written texts (e-mail messages, comments, CVs) to be submitted for individual correction.

The topics, directly connected to cultural aspects of English-speaking countries or sector-specific issues, are frequently inspired by Bob's posts.

2.2. Implementation

Tested during the experimental phase (Sisti, 2009), the course has been recently augmented to develop oral skills more efficiently and foster stronger teacher-student and peer relationships. This implementation was carried out using selected free software and web 2.0 tools.

Since the ACS degree course is in English, the *de facto* lingua franca of new technologies, students are strongly motivated to increase their competence in a

language that is indispensable for their professional advancement. Moreover, they are very interested in computer software and ICT as a vocation. To enhance collaborative knowledge construction and practise oral interactive skills, students will be asked to use the following free web-based tools.

- **Mailvu:** a free video-authoring tool which enables to record short videos and to store them. Video clips may also be shared within a community through a short link that may be posted on Facebook, LinkedIn, Twitter, or in a text message to fellow students and/or the instructor;
- **Natural Reader:** free text-to-speech software which converts written material into audio format (MP3 or WAV files). The reading voice is very natural and offers a choice between British and US English accents. The software highlights each word as it is read and offers the option of slowing the reading speed down, allowing learners to improve their spelling and pronunciation;
- **SoundCloud:** audio recording tool able to capture the student's voice and transform it into a visual format (a waveform);
- **Glogster:** an interactive visual platform allowing learners to create their multimedia posters or web pages in groups;
- **FolioSpaces:** a free ePortfolio service used to create a personal space (private or shareable) to write and store media related to learning activities;
- **Skype:** well-known software allowing students to talk to their classmates and international partners about topics related to their professional sector. Moreover, the instant messaging feature, which allows users to clarify questions in writing in real-time, avoids misunderstandings due to poor competence in the FL and helps effective tandem learning.

3. Discussion

Two learning objects involving CLIL methodology and English for Specific Purposes were created to promote greater awareness of the language-teaching context. They consisted in Power Point presentations of slides with written and audio comments that students were asked to read, listen to and then discuss with their classmates and instructors in online synchronous seminars and written chat sessions. These two learning objects were transformed, thanks to *Mailvu*, into video clips so as to allow learners to actually see their instructors while commenting the slides. Moreover, the video-authoring tool will also be used by students who will be invited to create their virtual presentations in a video format. By doing so at the beginning of the course, they can get to know one another by sharing information about their personal and professional lives but, starting from next year, also associating names with faces. In addition, their video clips can be sent to their international partners so as to help them socialize and build closer cross-cultural online communities.

As mentioned, all teaching units propose readings, chosen from various Internet sources, accompanied by notes and completed with comprehension exercises. Students will be asked not only to read but also to listen to these original materials using *Natural Reader* to get ready for synchronous Skype conferences where special emphasis will be placed on their ability to articulate sounds correctly. Students should become aware of English intonation and of the difference between the graphic and phonologic systems by choosing the speech speed adequate for their needs and working autonomously on the synchronized highlighting of sentences.

The *My contribution* writing exercises will be recorded by students using *SoundCloud*. The course instructors, after reviewing the short texts will send them back to the authors in a final version ready to be transformed into an audio file. This will encourage learners to practise pronunciation and allow teachers to focus on relevant prosodic features (weak syllable deletion, intonation etc.). Students will be able to see their waveform audio track pinpointed with teacher's comments while listening to it.

Various topics dealt with in the online CSEC units are particularly relevant to Computer Science studies while others are more related to intercultural issues given the fact that students attending the online course might be native speakers of any language. In units such as: Techie Jargon, Multiculturalism at the Table, Meeting and Eating, Travel, and others, *Glogster* will be used to create web posters. Learners will be asked to work in groups on this multimedia platform to carry out a project related to the topic of the unit through a creative use of multi-media relevant Internet resources. A virtual classroom will be constituted where each student can use diverse formats – according to his/her cognitive style – to provide his/her personal contribution to the topic of the unit; at the end, the best multimedia poster will be voted and rewarded. These projects, as others, will be stored, managed and displayed in student university e-Portfolios created with *FolioSpaces*.

Individual audio-video presentations, audio recordings of *My contribution* short texts, and group *glogs* may be embedded in a personal, virtual portfolio hosted in *FolioSpaces*. The instructor can provide feedback which is visualized by the student while the archive is constantly updated. This repository of diverse artifacts is also very useful for tandem activities where learners are expected to work with foreign students attending the same degree course.

Indeed, thanks to *Skype*, our undergraduates will be able to discuss professional and cultural issues with their Erasmus partners using autonomous, cooperative learning methods. In doing so they will improve their linguistic competence and Computer Science knowledge. Language learning in tandem via the Internet is generally considered an effective way to learn a partner's language while teaching one's own, in this case English is used as a *lingua franca* to work together across great distances.

4. Conclusions

The improved version of the course will be offered to first year students of the 2012/13 academic year with the aim of promoting greater practice in oral skills through authentic social interactions. Indeed, in computer-mediated FL courses, the lack of face-to-face interaction, which plays a key role in promoting the acquisition of socio-pragmatic conversational skills, seems to be a serious drawback. Learners taking online courses usually study and carry out activities in isolation, and this may hinder effective interaction in a FL in real-life communicative situations. To counteract this tendency, students will be encouraged to speak and listen to their partners much more, working in groups in virtual social communities.

By means of Web 2.0 tools they will be urged to express independent and creative thought and to become confident problem solvers in a challenging and motivating learning environment where collaborative learning and knowledge building are promoted.

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Published by Research-publishing.net
Dublin, Ireland; Voillans, France
info@research-publishing.net

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Research-publishing.net is a not-for-profit association

CALL: Using, Learning, Knowing
EUROCALL Conference, Gothenburg, Sweden
22-25 August 2012, Proceedings
Edited by Linda Bradley and Sylvie Thouésny

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ISBN13: 978-1-908416-03-2 (paperback)
Print on demand (lulu.com)

British Library Cataloguing-in-Publication Data.
A cataloguing record for this book is available from the British Library.

Bibliothèque Nationale de France - Dépôt légal: décembre 2012.