Self-learning Catalan phonetics. From description to application

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ABSTRACT

Internet resources for self-learning in the field of phonetics are quite common for majority languages such as English, French and Spanish. In the last decades, though, Internet utilities with the same purpose have also been developed for minority languages such as Catalan. It is the case of some websites that offer material to learn about the different levels of phonetic description (articulation, transmission, and perception) and to practice the pronunciation of Catalan, both of the discrete sounds and of the intonation. The goal of this paper is to describe and compare two available websites: “Els sons del català” (SC) [The sounds of Catalan] [8] and “Guies de pronunciació del català” (GPC) [Catalan pronunciation guides] [9]. In this paper, we explain how these websites work, and how they complement each other. While the former has been designed to provide a complete description of Catalan sounds, the latter has been designed to be applied in the process of learning and teaching Catalan pronunciation, especially by and to non-native Catalan speakers.

Keywords: Catalan phonetics, Catalan pronunciation, self-learning, L2 pronunciation learning

1. INTRODUCTION

The freedom of the individuals to learn and self-manage, to find what they need and to adapt it to their environment is becoming a common practice. A practice that has its origin in the 70’s, when CALL (Computer Assisted Language Learning) were developed and used for the first time. The advantages of this new system were soon made obvious: a greater motivation of the students, an encouragement of the process of individual learning and a dynamic and interactive access to the information (see [12]).

With respect to Catalan, in 2006 a new website, “Els sons del català” (henceforth SC), was created with the aim of providing resources to learn Catalan phonetics autonomously. The SC (available at the address http://www.ub.edu/sonscatala and with free-access) was developed by a team of professors from the University of Barcelona and with the help of advisors from different Catalan universities.

The website tried to fill the existent gap with respect to the materials devoted to self-learning phonetics in other languages (see [13]). Since then, the website has been enlarged, improved and in constant renovation. It has been adapted, for instance, to the new technological needs, such as its access through tablets and cellular phones, or the possibility of self-managing the contents. The SC is essentially aimed at a) assisting in teaching and learning the mechanisms of production, transmission and perception of Catalan sounds; b) helping Catalan graduate and undergraduate students of those degrees that have phonetics and phonology as object of study or as a working means (i.e. Philology, Speech Therapy, Linguistics, Translation, Communication, Journalism, among others) in learning both disciplines autonomously, in accordance with the European Higher Education Area guidelines; c) providing Internet support materials and resources to those professionals working in fields such as language advising, correction, and speech therapy (for more information, see [3]).

Ultimately, the SC offers visual information, with different levels of complexity, about different aspects of Catalan phonetics. In this respect, it has been demonstrated that this type of information works more efficiently with adult learners than with non-adult learners, and it is especially useful for acquiring self-consciousness about the position of the articulatory organs [11]. The disadvantage of using just this kind of system is that it does not contain information about the coarticulation of sounds or the communicative context in which the sounds are used.

In this respect, it is well known that speakers who have to learn a non-mother language are faced with
2. DESCRIPTION OF THE SC AND GPC

2.1. SC: structure, appearance and contents

The website is structured around a tool bar menu, placed at the top and containing the sections Home, Phonemic charts, Team, Glossary, Links, News, and Funding, and it is available in two languages, Catalan and English.

2.1.1. User-friendly interactive Phonemic Chart

The sounds are presented through a user-friendly interactive Phonemic Chart (containing pop-up windows with explanations about the origin of the symbols, the articulation of the sounds, the meaning and uses of the main diacritics and suprasegmentals, a description of the manner and place of articulation, etc).

The Phonemic Chart has two levels of surfing: the one displayed when the cursor is placed on the symbol and the one that is displayed when the user clicks on the symbol. When the cursor is placed on a phonetic symbol, a pop-window appears, that contains a description of that sound's articulatory features as well as the origin of the corresponding phonetic symbol. When the user clicks on a phonetic symbol, a plain window appears that contains three main frames, which correspond to the moments of production and transmission of sounds: a) a video frame, b) a diagram frame, and c) an oscillogram and spectrogram frame (Fig. 1). These main frames, at the same time, are surrounded by further links and additional material.

Figure 1: Plain window of a phonetic symbol.

2.1.2. Additional information about the sounds: Palatograms and DMRI and Parts of the vocal tract

Just below the articulatory diagram in the middle there is a link to the section Palatograms and Dynamic Magnetic Resonance Images (DMRI). The former represent the degree of contact (represented in purple) between the tongue and the palate in the articulation of those sounds that involve these two organs, and the latter are a faithful reproduction of the movements of the articulators in the production of sounds.
**Figure 2:** Palatograms and Dynamic Magnetic Resonance Images (DMRI).

In the top right part of each of these windows, there is the section Parts of the vocal tract, which show the labels that those receive in an interactive way: placing the cursor on the labels in the left the different parts become highlighted and can be easily identified and recognized (Fig. 3). Active articulators are pink in the labels, whereas passive ones are green. The relevant cavities (oral, pharyngeal, and nasal) in the articulation of sounds are also highlighted when the cursor is placed on the respective label.

**Figure 3:** Parts of the vocal tract.

2.1.3. **Additional resources: Comparison of sounds**

Finally clicking on the Comparative sound chart, placed at the top right part of the main Phonemic chart (corresponding to each dialectal variety), the user accedes to a webpage that includes three Flash animated articulatory diagrams by which the user can choose and simultaneously view the articulatory diagrams of three different consonant or vowel sounds in order to compare them.

2.2. **GPC: structure, appearance and contents**

The website is structured around a tool bar menu, placed at the left and containing the sections Home, Team, Before starting, Languages, Intonation, Links, Faq and News.

2.2.1. **Languages section**

The Languages section of the website is organized through tables containing the sounds of Catalan, which can be compared to those of other languages, for example those of Spanish. From this comparison, different groups of sounds are classified: 1) those that are common in both languages; 2) those which are exclusive of one of the languages, and 3) those that are shared by both languages but which do not have the same distribution (see Fig. 4). These three possibilities are depicted by an analogy to traffic lights, in the same order: green-colored sounds exist in both languages. Red-colored sounds are those that do not exist in the itinerary language. Amber-colored sounds are those that could be problematic for a non-Catalan speaker (since these sounds appear in different contexts, etc.). The blue-colored sounds are the ones that do not exist in Catalan. Above each sounds, there is a short list of words that contain the sounds, so that learners can associate the phonetic and the orthographic symbols.

**Figure 4:** Language section: Spanish-Catalan.

For each of the sounds in groups 2 and 3, the user can find a variety of audio and video activities (with regular and slow speed, and organized according to the degree of complexity) that consist in sensitization (listening exercises), explanation, imitation (speaking exercises), practice activities and communicative activities (see Fig. 5). Of special interest is the tool which allows the user to record himself in order to contrast his pronunciation with the prototypical one. In this respect, we are working now in the possibility of automating this tool.

**Figure 5:** Listening self-correctable exercises.

A collection of Catalan folklore material is included in the practice activities of the site in order to contextualize each problematic sound in a wider context and assimilate it in a more easy and natural way. The Catalan expressions and sayings, and the traditional songs and stories in Catalan try to help the speaker/learner know about different aspects of
Catalan culture. In addition, following the lines of European projects such as the “European Music Portfolio: A Creative Way into Languages”, in which they show how language learning can be benefited from music, the traditional Catalan songs included in this website have been harmonized and arranged following current musical tendencies so that the learning of sounds is more attractive to the speaker (see Fig. 6).

**Figure 6:** Catalan song to work [z].

### 2.2.2. Intonation section

Besides this material and given the proved importance of intonation in the process of learning a foreign language, practical exercises about intonation have also been added to the website. These exercises, which are being conducted by a team from the UPF, are organized according to the different sentence modalities found in Catalan, and include the communicative contexts by means of audiovisual material, intonation contours, repetition exercises, and also exercises of association between intonation modalities and the communicative context.

**Figure 7:** Intonation section.

**Figure 8:** Intonation: questions.

### 2.2.3. Before starting section

A few exercises on auditive sensitization were introduced in one of the beginning stages “before starting the project”. These exercises, designed by a professor of the IdT, have as a goal to prepare the users of the website using techniques that relax the body, so that the learning process is more successful (see [17]).

**Figure 9:** Auditive sensitization exercises

### 2.3. SC and GPC: application, targets and monitoring

The website SC has been applied with excellent results in the undergraduate courses devoted to Catalan phonetics and phonology in various Catalan universities. The specific results for its application to undergraduate Catalan courses in the academic years 2010/2011 and 2013/2014 can be looked up in [4] and [15], respectively. A Google Analytics account was created since the creation of the website, and the reports show an impressive influx of users: this year 2015 (Jan-June), for instance, the website has been visited by 11,866 users with a total of 17,245 sessions (15,049 from Spain, 775 from US, 114 from Germany, 105 from France, and the rest from other countries such as UK, China, Japan, Russia, Switzerland, Brazil, and Italy). For now, the user’s needs and queries are dealt non-automatically, although we are working on a mechanical tool to monitor its usage and performance.

The website GPC, on the other hand, has been exploded more recently, also with promising results, among students of the Catalan oral courses (Communication and Teaching degrees). Thanks to a continuous work with the website, the students have shown a clear improvement in the pronunciation of specific sounds (see [5]). The next academic year, an experimental action is going to be implemented: the website will be taught to be used as a tool to train, not only learning skills, but also teaching skills following a peer learning approach.

### 3. CONCLUSIONS

Learning phonetics and the pronunciation of a language is a process just as diverse as the learners. This is why a variety of input materials (visual, sonorous, audiovisual) and a variety of approaches to the subject are both necessary. Together these tools may help in presenting a possibly dry subject in an attractive, easily accessible manner. Herein, we have presented two websites, which are aimed at modernizing and updating the existing materials devoted to learning Catalan phonetics and at the
same time encouraging the process of self-learning in a dynamic, sequenced and multidimensional way. As seen, whereas the website SC is theoretically-sided, in that it is mainly intended to provide the Catalan native students with the necessary information to learn the phonetics of Catalan sounds, and therefore to help them to improve their knowledge about this subject, the website GPC has a more applied perspective in that it is mainly intended to assist non-Catalan native students in their performance of Catalan pronunciation, which, last but not least, is an increasing need among the Catalan society.

4. REFERENCES


5. ACKNOWLEDGEMENTS

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