LEARNING MODERN GREEK ON THE WEB: 
THE ‘FILOGLOSSIA’ SOFTWARE

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Abstract

In this paper we describe the construction of an on-line learning course for Modern Greek. The Web application was developed by the Institute for Language and Speech Processing (ILSP) and is accessible on the Web, free of charge. It is based on commercial CD software, also developed by ILSP. We present the software and we commend on the differences between the CD and the Web development, and the advantages and disadvantages of each medium.

Keywords: Web-based Education, Design and Development of Online Courseware

1. Introduction

The use of computer-based instruction is a well established and expanding field. Computers in education are quite popular and as a result all areas of education are undergoing changes in the way teaching and learning is perceived. Language learning is no exception [1]. Technology has become a widespread reality with important implications for second language acquisition. [2][3]. In traditional language learning courses there are pedagogical aspects that have to be taken into consideration. In computer-based courses there are additional challenging questions, such as the effectiveness of the new media and the choices over the available technologies to be used [4]. Of course, there are also numerous advantages in computer-assisted language learning, especially in self teaching situations.

The Institute for Language and Speech Processing (ILSP) has developed an interactive multimedia CD-ROM based course, called ‘Filoglossia’, for teaching Modern Greek as a foreign language [5]. ‘Filoglossia’ targets English speaking adults who are beginners in the Greek language. It can be used either as a self teaching or class teaching tool and its purpose is the acquisition of an adequate knowledge of the Greek alphabet, grammar and useful phrases. All material is presented under situations that a foreigner might encounter during a visit to Greece.

Language is communication and the Internet technology has dramatically altered the concept of communication. Easy and quick access to global information networks, communication with native or non-native peers in the target language and distance learning are just a few of the possibilities provided by the Internet and the World-Wide Web technologies. The Internet is becoming a valuable educational tool for tutors and learners in the field of foreign language learning [6][7]. It enables both groups to retrieve authentic material in the target language, which is not only restricted to plain texts, but may also involve audio-visual material (i.e. sounds, images or video files). Enhancing foreign language learning via the Internet also provides opportunities for genuine communication in the target language [8]. However, there are still only a few available structured foreign language courses in the Web, especially for languages with a limited audience, such as the Modern Greek language.

The growth of the Internet usage led ILSP towards the creation of a Web-based application for teaching Modern Greek. For this purpose, instead of creating an entirely new course, ILSP produced an online version of ‘Filoglossia’ CD-ROMs. The Web software attempts to include all the main features of the original multimedia application, presented to the Web user in a similar manner as the CD-ROM course, even through the Web version includes only a subset of the material of the CD-ROM version. It retains all the pedagogical and design characteristics of the CD-ROM based software. Although many of the technical features of the multimedia application were also converted to the Web version without any differences in appearance or functionality, there are still some divergences and limitations due to Internet technology restrictions. Furthermore, the Web
based course is accessible to all Internet users free of charge.

2. **Description of the CD-ROM software**

In the traditional formal instruction of a foreign language learners often receive impoverished or insufficient input in the target language [9] and quite often learning involves mainly memorizing grammar and syntax rules followed by extensive practice. This method was pejoratively referred to as the “drill and kill” practice. On the contrary, ‘Filoglossia’ provides the potential to help the second language learner access authentic language material and thus receive high quality language input. Using technology, the conditions which are thought to beneficially contribute to foreign language learning, may be replicated [10][11].

Towards the goal of accessing good quality and large amounts of language input and acquiring communicative competence, multimedia technologies were used (i.e. audio files, video files, self-evaluation and corrective feedback), along with some specialized speech tools (i.e. speech synthesis, speech recognition) developed by ILSP.

The complete ‘Filoglossia’ course spans four CD-ROM disks. The first two have been available for some time now, the third CD-ROM has been just published while the last one is still in development and will be available sometime in 2005. The CD-ROM version of ‘Filoglossia’ was developed using the Asymetrix ToolBook.

The first two CD-ROMs include 10 chapters with topics taken from everyday situations a foreigner would encounter in Greece. Each chapter has the same structure and it consists of four major sections (Figure 1). Only the first chapter has a different structure due to its introductory role and it contains only two sections, one with the Greek Alphabet and one with the Genders and Articles.

The first section in each chapter is the ‘Dialogue’ where everyday situations are presented in a video dialogue. User can watch simultaneously the subtitles in Greek and there is also the option to view the English subtitles to make comparisons and improve understanding of the spoken language. Every text sentence is a link that allows the playing of the video for the specific time duration of the particular sentence. Dialogue section is accompanied by comprehension exercises which are usually multiple choice or word completion exercises.

The ‘Vocabulary’ section contains two subsections (‘Basic’ and ‘Advanced’) with the Greek language vocabulary relevant to the specific dialogue. In the ‘Basic’ subsection the user can listen to specific words taken from the ‘Dialogue’ section. The ‘Advanced’ subsection contains an additional set of words (always accompanied by audio files and images or with animations) along with more exercises.

The ‘Grammar’ section (Figure 2) includes the grammatical phenomena of the Greek language that appear in the specific dialogue. Examples are presented in text and audio files, while a set of exercises helps the user to establish a sufficient level of comprehension for the specific grammatical phenomenon.

Exercises in ‘Filoglossia’ are interactive exercises, often accompanied by relevant audio and video material. Many of the exercises belong to quite common types of computer-based exercises, such as multiple-choice, fill in the blank, and drag and drop exercises (Figure 3). There are also some less common exercises, usually found in sections ‘Dialogue’ and ‘Grammar’, that are more animated and interactive. For example, there are exercises where user has to click with his mouse words in order to form sentences or the user listens to audio and then clicks on the relevant image. All exercises give feedback marking the correct and the wrong answers.
Figure 3: CD-ROM version: A drag and drop exercise in the ‘Vocabulary’ section

Figure 4: Web version: A ‘click and show or hide word’ exercise
The ‘Useful Phrases’ section is slightly different, combining theory and exercises. Its purpose is to help the user accumulate a sufficient knowledge of the use of particular phrases. Questions and answers are presented, based either on images or in the subtitles of a video, and the user is asked to provide the oral input. By using a voice recording tool, the user’s voice overlays the video dialogue.

Developing speech is an important aspect in foreign language learning and teaching. Learners’ ability to engage in meaningful conversational interaction in the target language is considered one of the most important goals of foreign language learning. To this end, speech technology has been incorporated in ‘Filoglossia’ with the use of two additional speech tools, Speech Synthesis and Phonetic Transcription.

The Speech Synthesis tool was developed by ILSP and it produces an audio output from its textual input using a digitized voice. The speech synthesizer [12] provides acoustic feedback of how a particular word, phrase or sentence is pronounced and offers to the user an oral feedback for the written Greek language. This speech synthesizer can works with arbitrary input and not just with sentences found in a particular dialogue included in the CD-ROM.

The Phonetic Transcription tool is used to translate a word or a phrase from Greek to the International Phonetic Alphabet. This tool can be proven very useful for learning Greek, taking in consideration the fact that the Greek Alphabet is quite different from the Latin alphabet. The tool is based on a set of rules, describing all possible features of every sound unit in specific phonetic environments. This tool was also developed by ILSP and it can accept arbitrary input.

Finally, ‘Filoglossia’ includes a bilingual Greek-English dictionary. This is more of a glossary than a general-purpose dictionary, since it includes mostly the words that appear in the ‘Filoglossia’ material. The glossary contains the lemmas, their translation and an easy-to-use example, which in its turn is translated to English. In cases of polysemy, the most common meanings of the word are presented and their corresponding translations.

3. Description of the Web course

Before developing the Web version of the ‘Filoglossia’ software, we searched the Web trying to find something similar but we found nothing comparable to ‘Filoglossia’. Most of the courses for teaching Modern Greek that exist today in the Web offer very little in terms of interactivity or multimedia material. Most of the material is quite similar to a book, and very few of them contain some audio files as well.

So we decided to develop a free Web version that can be used as a first course in Modern Greek. It also serves as a promotional tool for the CD-ROM version. For this reason, the Web version contains only about the 1/3 of the original material of the first two CD-ROMs of ‘Filoglossia’. Also, the Web version does not include the specialized tools. Apparently, it wasn’t our intention to replace the original multimedia application. Even with those limitations we have found almost no other comparable free courses in the Web for language teaching (Greek or any other language) that can be compared to the ‘Web Filoglossia’ in terms of richness of the material and completeness in design and features.

Designing the Web version we initially considered transforming the initial Toolbook pages into Web pages using an automated process. In theory, this is something that can be done. However, in practice this proved to be impossible due to the different types of interactivity in many CD-ROM parts. The required interactivity could not be successfully transferred to the Web without extensive re-writing of complicated code. So, we decided to develop the Web version from the ground up as new software. Due to budget and time limitations we decided to omit some of the more complicated parts of the CD-ROM version. Also, we wanted to develop lightweight software, accessible to as many Web users as possible, even through slow Internet connections. These considerations also led us to decide avoiding technologies such as Macromedia Flash or Java.

The Web version of ‘Filoglossia’ can be found at the URL address ‘http://www.xanthi.ilsp.gr/filog/’. The development of ‘Web Filoglossia’ was based on Active Server Pages (ASP) technology, with embedded JavaScript for client side interactivity. Advanced Streaming Format (ASF) files are used for streaming video publication using a Windows Media Server. Media Server provides automatic quality adaptation to different connection speeds, so the use of ASF files provides
adequate quality of streaming videos to users with 56 Kbs PSTSN connections, and there is no need for large video file downloads. On the other hand, the audio files used in ‘Web Filoglossia’ usually contain only single sentences and thus they are quite small and there is no need for streaming. Audio files are offered in two formats, WAV and MP3, and the user can select which one he prefers. Due to volume and speed limitations, the use of the MP3 audio format offers an advantage of high quality audio files with high compression ratio.

‘Web Filoglossia’ follows the same structure as the original CD-ROM application. Ten chapters constitute the content of ‘Web Filoglossia’ and each one contains four discrete sections: ‘Dialogue’, ‘Vocabulary’, ‘Grammar’ and ‘Useful Phrases’ as shown in Figure 1.

The ‘Dialogue’ section contains the same video files of the CD-ROM. The Web user can view them using the Windows Media Player. The video presentation offers one example for the differences between multimedia CD-ROM and Web application development. In the CD-ROM the video viewer resides inside the application and the subtitles (and the translation of the subtitles) reside in a text box and are synchronized to the video segment shown at the moment. The CD-ROM user can only view the subtitles for the particular segment he is currently watching. On the contrary, in the Web such a synchronization of text with streaming video is quite difficult to achieve and we did not attempt it. The user can view the transcript of the dialogue of the video (and optionally its translation) in its full extent in a table form. Again, each of the sentences is a link to the particular audio file, so the user can catch up with sentences that he wasn’t able to hear well.

The ‘Grammar’ section contains material without using any animations, which are common in the original ‘Filoglossia’. Preference was given to a less ‘animated’ presentation of the material, although there is an extensive use of audio examples and images (Figure 5).

Regarding exercises, a selection was made of those which could be transformed to a Web page without great loss of functionality. Obviously, multiple choice exercises are easy to transfer using HTML forms. Word completing exercises were also transferred without any major changes, using textboxes instead of blanks. Exercises that demanded clicking words or images were included also without significant changes, using either links of JavaScript. Drag and drop exercises required bigger changes, and often they were excluded from the ‘Web Filoglossia’. When drag and drop exercises were included, ‘drag and drop’ behavior was replaced by a ‘click and show or hide images’ behavior. For example, Figure 4 shows the same exercise as in Figure 3. However the animated ‘drag and drop’ is now replaced by a simpler behavior. As in the CD-ROM, the user can instantly check whether his/her answers to the exercises are correct.

The ‘Useful Phrases’ section has also lost some interactive aspects, since we removed the recording-voice option which would be difficult to implement. Now Internet user can only watch the relevant video dialogues and just read the question and answers.

4. Difficulties in the construction of an on-line course

Just as there is a diversity of programming languages available and suitable for conventional programming tasks, there is also a diversity of languages available and suitable for Web programming. The Web does place some specific constraints on our choices: performance (both speed and size); security; platform independence; multi-user considerations; protection of intellectual property. Often, these issues are not independent of each other. A choice which seemingly is optimal in one aspect may be sub-optimal in another. Regarding the tools and technologies a Web developer has to its disposal today, the situation has improved considerable during the past few years. However, it is still a lot easier to develop a rich CD-ROM based application than a similar Web based one.

The value of ‘Web Filoglossia’ is the fact that it was, and probably is, the only free of charge online conversion of a multimedia application. Other Greek learning courses are usually Web versions of a book or very limited demonstrations of CD-ROM commercial applications. ‘Web Filoglossia’ is the only language learning course combing audio and video material, exercises with corrective feedback, together with a user-friendly and attractive interface and a structure enabling a English speaker to learn basic modern Greek without buying or installing anything.

Because the primary role of ‘Web Filoglossia’ was to promote the original multimedia application, it was decided that not only should the Web version contain a part from the original material, but should not also try to be a strict replica in terms of behavior. This has eased the development hassle. However, we have encountered a lot of limitations in the simple ASP-HTML tools we used.

One obvious example is animation. From the technology perspective, the use of DOM (Document Object Model) would be a good solution for some simple animations that could further enhance the Web version of our software. However, even through there is now an official W3 recommendation for the DOM, different browsers have implemented different parts of the official recommendation. To use simple interactive animations on a Web page one still has to resort to tools like the Macromedia Flash.
Browser independence remains a problem that had to be dealt with. The need of having video files, which would add a lot of load if they remained at their original AVI format, produced a necessity for streaming videos. It was necessary to convert all AVI files to ASF files with the use of Media Encoder. It was very helpful that the Windows Media Server provides the automatic detection of user connection speed and behaves accordingly. Web pages use a Windows Media Player plug-in embedded in the HTML code. Although most browsers (Internet Explorer, Netscape) identify the plug-in, there are still some cases (Opera, Mozilla) that do not. In those cases an external Windows Media Player application was necessary. Of course, the above remarks apply only to “browser independence” in Windows systems. For Unix clients we would have to use a different format, which we might do in the future if our time and budget restrictions permits it.

Connection speeds and file volume were the two reasons for using the MP3 format for audio. Although a selection choice between WAV format and MP3 format is available in the Web version, the use of MP3 format was imperative for providing a quick and not very demanding online application.

5. Conclusions

The existence of the Web version of ‘Filoglossia’ has made a positive impression throughout the years it’s been available (the first version was published in 2002). The use of a feedback option provided us the ability to maintain better contact with user needs and remarks. We have also received a lot of constructive feedback through e-mail.

Figure 6: Web statistics of Filoglossia

We have not made any particular efforts in publishing the link to the Web version of the Filoglossia. However, the Web statistics from our site show that its audience is growing steadily (Figure 6). The chart presents server requests (left axis, top line) and page requests (right axis, bottom line). Each page hit can result in several server requests as the images for each page are loaded.

Even thought the audience for a Modern Greek language learning course is smaller than other more widely spoken languages, requests have been made from about 82 Countries. We believe that this proves the wide interest for such free on-line language learning courses.

6. References