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Implementing online language exams within the Spanish National University Entrance Examination: The PAULEX Universitas Project

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Abstract

This paper describes the PAULEX Universitas Project, an online system to design, deliver and assess the foreign language exam that is an integral part of the Spanish national university entrance examination. The foreign language exam is compulsory for all students who wish to enrol in higher education. Students can choose to take one of the following language exams: English, French, German, Italian or Portuguese. Every year, approximately 27,000 students take the university exam simultaneously in the Valencian Community (comprised of 3 provinces: Alicante, Castellón and Valencia) and over 25,000 of these take the English language exam. The paper describes the context in which this university entrance exam takes place, with reference to the current changes in Spanish ministerial policies. Illustrations from the platform are included, as well as a discussion on issues relating to the system's management tools, data security and user interaction. The paper concludes by presenting some of the results obtained from a pilot experience conducted in Valencia with more than 200 students and by addressing a number of difficulties encountered concerning the implementation of the PAULEX online examination platform regionally.

Keywords: Spanish University Entrance Examination; online testing; computer-assisted language testing; official language exams; PAULEX project

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1. Introduction

In December 2008 the Spanish Ministry of Education published a new law to regulate the national University Entrance Examination[1]. This new law[2] establishes that the English language exam, which had traditionally been based on reading comprehension exercises and written production, should now include assessment of listening comprehension as well as speaking skills. This happily coincided in time with a project proposal submitted to the Spanish Ministry of Science and Innovation to design a computer platform to deliver the foreign language exam within the official university entrance examination. Taking previous work conducted by the CAMILLE R&D Group[3] at the Universidad Politécnica de Valencia as a starting point –namely, the InGenio authoring tool and delivery environment (Gimeno 2008a and 2008b)– the group members set about designing a completely online platform to a) design the foreign language exam, b) deliver it online, c) assess the completed exams, and d) supply the exam results to the local examining board. The three-year project ran from September 2007 till the end of 2010.

2. PAULEX Universitas

The PAULEX online exam delivery platform is controlled by a Central Server (CS), located within the University's central Information and Communications Systems unit, through which the administrators manage access to the system. A second server is constantly duplicating all the information from the CS and making backup copies automatically should it be necessary to replace the CS, to work on it or to repair any of its components. The contents and the platform could also be managed and run on any other external web servers should the platform finally be implemented to manage and deliver the foreign language exam within the Spanish University Entrance Examination. In Spain, every autonomous community or region manages its own university entrance examinations. In our case, it is the Department of Education of the regional government of the Valencian Community who is in charge of administrating these exams in collaboration with the public universities located in its territory[4].

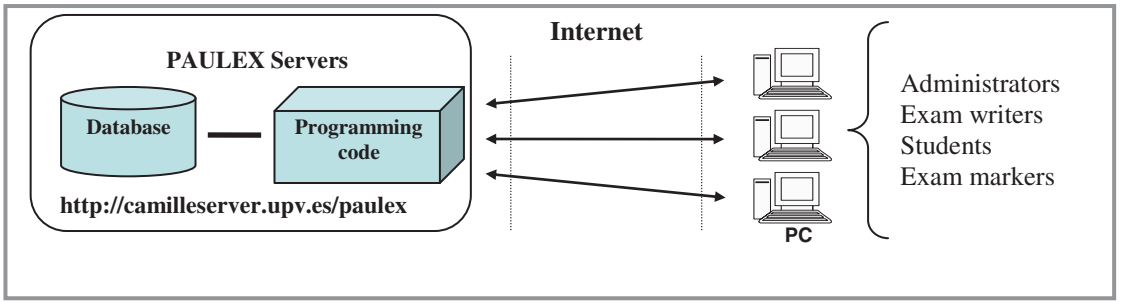

Figure 1. The PAULEX platform structure and connection

The PAULEX platform is basically structured into two main parts: the database and the programme code. The database is developed through PostgreSQL, one of the most efficient open source database

[1] In Spanish, the exam is known as *Pruebas de Acceso a la Universidad* (PAU).
[2] Real Decreto 1892/2008. Available from http://www.boe.es/boe/dias/2008/11/24/pdfs/A46932-46946.pdf
[3] The CAMILLE R&D Group comprises language specialists, graphics designers and computer engineers.
[4] There are five public universities in the Valencian region: Universidad Jaume I de Castellón; Universidad de Valencia; Universidad Politécnica de Valencia; Universidad de Alicante, and Universidad Miguel Hernández de Elche.

management systems available on the Internet. The programme code is especially designed for the web using PHP, HTML, XML and JavaScript languages. The multimedia archives saved on the server are also part of the PAULEX database, allowing administrators to build up an abundant pool of images and audio and video files, in addition to the audio files created by students when completing the oral section of the exam through the voice-recording system. Figure 1 illustrates how users access the platform and adopt specific roles (administrators, exam writers, students and assessors/exam markers). Each of these users has a specific graphical user interface through which they communicate with the CS. The only system requirements are a live Internet connection and a specific plug-in to reproduce audio and video and to record the students' utterances.

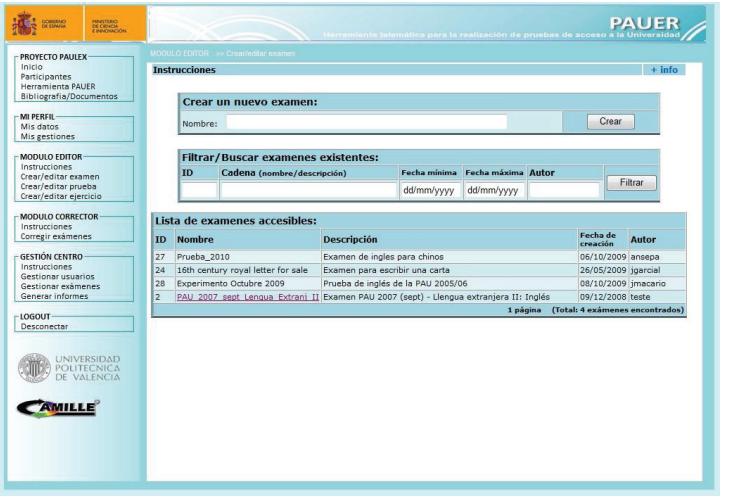

Figure 2. Exam writer's interface within the PAULEX platform

3. The first pilot experiment

The project was conceived as an attempt to design and to test the feasibility of implementing a computer-assisted foreign language exam within the official University Entrance Examination in the Valencian Community. The newly approved regulations determined, for the first time ever, that listening comprehension and speaking skills would also be included in the exam as from June 2012. As the information included in the new legislation dealing with the revamped exam is extremely brief and general, the CAMILLE R&D Group designed and distributed a questionnaire among secondary school teachers who teach English in the second year of *Bachillerato*[5] from the three Valencian provinces (Alicante, Castellón and Valencia). The main goal was to discover – given their first-hand experience – which exercise typologies they thought would better suit the assessment of all four language skills in an online environment. The results of the questionnaires and the current exam format were then combined to produce a new exam that integrated all four skills (reading, writing, listening and speaking). This pilot exam was then taken in a simulated authentic environment by 200 students who were due to take the

[5] The second year of *Bachillerato* is the last year in Spanish secondary education. All students wishing to enter university must do the first and second years of *Bachillerato* and then take the university entrance examination.

official exam in June 2010. After completing the exam, the students were requested to fill in an opinion questionnaire which was designed to collect information regarding their computer-literacy, their everyday use of computers, their willingness to take the exam using the PAULEX online platform, their response to recording their own utterances in a file for subsequent assessment, etc.

Figure 3. Sample speaking exercise

The results were extraordinarily satisfactory in every sense. The students who took the online exam felt that the platform was user-friendly, especially when editing their answers, watching video files and speaking into the microphone to record their voice in response to a video recorded question. The researchers had made a special effort to include topics that would trigger the students' interest and focused the entire exam on current social issues. In the listening section, students watched a number of videos which included content and questions. They were requested to watch the video contents, listen to the questions and then write open answers or tick multiple choice questions. The speaking section proved to be the most interesting part for research purposes. The exam included an attractive image showing the logos of a number of popular social networks and online chat platforms. They were requested to analyse the image and speak into the microphone relating the networks to their own personal likes and experience (see Figure 3). Although they were given a four-minute slot to record their answers, very few of them used the entire time frame. Anecdotally, it was obvious throughout the trials that the students were shy and remained silent when they first approached this part of the exam. They did not start talking until one of their partners had done so beforehand. They spoke into their microphones in a low voice so that the system could record their answers, but avoiding their partners hearing them.

The online platform requires students to complete the exercises and, once they are satisfied with the

answer, validate each of these and any modifications they may make. Upon validation, the results are then transferred to the CS and made available to the exam markers for them to assess the parts of the exam which are not automatically evaluated by the system (open input exercises and voice recordings).

4. Conclusions

To conclude, the PAULEX platform has been presented as a robust tool to enable the administrators of the Spanish University Entrance Examination in the Valencian region to deliver the foreign language exam via the Internet. After several years of research, the computerization of this exam has been considered as one of the most achievable alternatives to face the challenges arising from the changes included in the new Spanish educational legislation. The first pilot experiment has proven extremely favourable since both secondary school teachers and students who have tested the system in real conditions are in favour of its implementation. Initial piloting showed that implementing a computer-assisted English exam as part of the Spanish University Entry Examination is not only feasible, but also recommendable. A very high percentage of students agreed that they had felt no additional strain while completing the exam online. The results have also been very satisfactory, though teachers and students have been advised not to rely on the marks obtained in the pilot trial as being equivalent to the ones that they would achieve when facing the exam in real circumstances. Most of the exercises have been assessed automatically, though personalized marking has been required for open input exercises such as the writing and the speaking tasks.

Acknowledgments

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