# Work in Progress – Exploiting videoconferencing possibilities to promote the European convergence process

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*Abstract -.* **This paper introduces the experience of using videoconferencing and recording as a mechanism to support courses which need to be promoted or discontinued within the framework of the European convergence process. Our objective is to make these courses accessible as live streaming during the lessons as well as recorded lectures and associated documents available to the students as soon as the lesson has finished. The technology used has been developed in our university and it is all open source. Although this is a technical project the key is the human factor involved. The people managing the virtual sessions are students of the courses being recorded.  However, they lack technical knowledge, so we had to train them in audiovisuals and enhance the usability of the videoconferencing tool and platform. The validation process is being carried out in five real scenarios at our university. During the whole period we are evaluating technical and pedagogical issues of this experience for both students and teachers to guide the future development of the service. Depending on the final results, the service of lectures recording will be available as educational resource for all of the teaching staff of our university.**

*Index Terms* - Lectures recording, Videoconferencing systems; Distance education; Virtual classroom.

## INTRODUCTION

The development of a European Space for Higher Education widely known as the Bologna Process is currently being promoted. Curriculum restructuring is being carried out at our university as part of the Bologna process implementation. Some subjects have been discontinued but they need to be supported for students registered under the old curricula that do not pass this year´s exam. Likewise, all students have to demonstrate a previous advanced English level to access the English courses as part of the degree, so our university has introduced an English basic and medium course to help these students to improve and achieve the desired level.

For this purpose we have developed an integral solution of videoconferencing and recording lectures following the ideas presented in [1] and [2]. Our proposal includes a web portal, a videoconferencing tool and an economical and easily transportable hardware kit. Offering online video recordings of lectures after they have been given is useful in allowing students to view lectures they have missed or to re-view difficult lectures again to improve understanding [2]. Recorded sessions can be exported to SCORM and LOM. We are evaluating the performance of our solution as tool to promote the European convergence process.

The remainder of the paper is organized as follows. Section 2 describes the scenario for which we intend to provide a solution. Section 3 highlights issues related to the implementation carried out. Section 4 presents the project status. Finally, we present our conclusions and future work

## SCENARIO

The web platform to schedule, perform, stream, record and publish the videoconferences automatically is called GlobalPlaza [3] and it is integrated with the videoconferencing tool that we have used which is called Isabel [4]. Both of them are open source and have been developed in our university for educational purposes.

In order to provide educational support to GlobalPlaza, the CyberAula 2.0 project has been proposed. Its main objective is to record lectures and export them to SCORM and LOM compliant files which can be imported by an LMS such as Moodle. Students can review the recorded lectures when needed through Moodle. Five pilot scenarios located in different campuses at our university have been proposed to validate the CyberAula project:

TABLE I
CYBERAULA'S SCENARIOS

| ID | Subject | School/Faculty |
|---|---|---|
| 1 | English courses | Industrial engineering |
| 2 | Digital Systems | Computer science |
| 3 | Web 2.0 | Telecommunications |
| 4 | Structure of materials 2.0 | Civil engineering |
| 5 | Plants of Agro-alimentary interest | Agronomics engineering |

## IMPLEMENTATION

Although CyberAula is a technical project the key to achieving its objectives has been the collaboration of the people involved, professors that teach in the classes, students that manage the videoconference and technicians that give support to the former ones.

Our goal is for the students to be able to manage the appropriate hardware and software to prepare the session,

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connect to it and solve any possible problems that may arise. The main difficulty here is that these students are not technical people and they lack the adequate knowledge. So we had to prepare several training courses for them, from the very basic ideas such as explaining the project scenarios and architecture up to advanced ones such as installing the videoconferencing system in a laptop or connecting and using cameras and wireless microphones.

An economical and easily transportable hardware kit has been proposed to carry out these videoconferences just with the help of an internet connection and a power supply. The hardware kit is made up of one laptop with Isabel installed, 2 wireless microphones and receivers (one for the teacher and one for the students), a camera and a tripod.

The managing students will have to create a "virtual class" event in GlobalPlaza for the specific time in the course and at that time they will have to start all the hardware and connect the Isabel running on the laptop to the session. After this they will have to test the audio and video and operate the camera during the course. Modules to export recorded lectures to SCORM and LOM have been developed in GlobalPlaza. An example of the SCORM package produced by GlobalPlaza and implemented in Moodle is detailed in figure 1.



FIGURE 1
EXAMPLE OF SCORM PRODUCED BY GLOBALPLAZA

## PROJECT STATUS

Half of the project has already passed and we are starting with new courses in the second four-month period. These courses are currently being recorded and the videos and documents generated in the first period are accessible for the students. In this period scenarios 1, 4 and 5 have been validated.

At the beginning some of the students had problems with the setup of the hardware and software but now they can do it for themselves and they usually require much less support from the technical staff.

We have introduced an audio monitor and a wizard in Isabel to listen to the audio that the microphones are capturing as a result of audio problems.

## CONCLUSIONS AND FUTURE WORK

The use of a videoconferencing system together with the scheduling, streaming and recording platform is allowing our university to support courses which need to be promoted or discontinued in the framework of the European convergence process. One detected problem that we are solving with a new version of Isabel is that sometimes the internet connection fails or has some packet losses and so the course cannot be recorded or experiences a very low quality. Isabel will now have a new functionality to locally record the session and GlobalPlaza will allow the user to upload the resulting video.

Surveys on usability, students' learning experience and use of the CyberAula kit solution are being designed. This study will involve teachers, students and technicians. The results from these surveys will be collated and used to guide future development of the full service.

We are evaluating technical and pedagogical issues of this experience for students and teachers. According to the final results, the lecture-recording service will be available as an educational resource for all of the teaching staff at our university.

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