Utilização de Video Conferência para Exame

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Identificação da disciplina

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1 Introduction

This experience was applied during a course "Innovation in Elearning" of the Wien University of Technology. The syllabus of the course, calendar, teachers, objectives, students, projects and other details can be found at www.ai.tuwien.ac.at/elearning/innovation_lecture/. It was a face to face course with twenty five hours of lectures complemented by documents placed on the course website and with some elearning done by the students. It was a course with an examination of the projects done by each of the student groups where the theme was related with elearning. The presentation of each project, the related discussion and final evaluation was done by the three teachers with direct interaction with the students of each group. Due to schedule conflicts one of the teachers, and author of this paper, had to be present in his home university during the day of the exam. The solution chosen was to perform the examination by the absent teacher using videoconferencing.

2 Details of Videoconferencing

The equipment and technology is defined by a system with two-way audio and video. It is a system where the video and audio signals are compressed and transmitted over a digital phone line. The advantages are interactivity, flexibility and multi-site connectivity. Some drawbacks are quality of picture and sound and the need for careful organisation. The equipment based on desktop videoconferencing is suitable for a small number of participants, allows simultaneous transmission of documents (file sharing) or working together on files (collaborative working) but has generally poor picture quality. Another level of equipment is the room-based systems that is suitable for use in the classroom. It has components like camera, document camera, monitor, microphone, loud-speakers, codec or interface (menu-driven or key-pad).

The basic functions that can be exploited are video call, establishing the connection, video controls for selecting sources, preview of images before sending the images, audio muting the microphone and adjusting the volume, camera controls, pan, tilt and zoom. The planning can have a first phase to split up the content, determine the content, establish the structure and draw up a list of subdivisions of the planned presentation. A second phase may consist in establishing a rough timing of the intervention, allocate an approximate length to subdivisions, set time aside for breaks and introductions. A third phase may be dedicated to planning the learning and teaching activities, taking into account the online vs. offline, the interaction vs. no interaction, a possible ice-breaker and the numerous possibilities like lecture, guest speaker, video/audio, demonstration, questions and answers, silent reading, reading aloud, written exercises, oral exercise, discussion, brainstorming and role play. A fourth phase can be selecting and designing support materials like ready made slides, spontaneous slides, tables and diagrams, photographs and drawings, video, audio, computer applications, telephone, fax, lesson outline, articles, books and textbooks, demonstration objects. The final phase of using videoconferencing can be evaluating from the learner's and from the teacher points of view, the final timing of the sessions leaving space for introductions, agreements and going over the outline. There should be at least breaks every hour, facilitate

informal questions and - if necessary - feedback, there should always be a contingency planning in case of technical problems.

The distance learning classroom should have a good digital or internet connection, phone and fax connections, the capacity should be limited to a number of participants than can comfortably fit into the room, should have a dull-blue or grey background with mate table tops, with only fluorescent lamps and if necessary curtains as a back drop and acoustic ceiling. The set-up should have the centre of the monitor at 1.25 m, with a camera levelled with the top of monitor, with no light aimed at the camera, with loudspeakers as close as possible to the monitor and with enough distance between the presenter and the camera. Concerning the teaching scenarios it should take the camera angle into account and consider the view from a distance. To operate the system there is a need to make a a checklist of everything needed, to make arrangements with the local videoconferencing administrator and the with the administrator at the other end, to inform the learners and to introduce the learners to the technology.

Concerning the appearance there should be no bright colours or busy patterns, no shiny objects and preferably no dark eyeliner or very strong lipstick. There should be for objects an extreme close-up, use for one person a close or medium shot, for two to four people and or for a teacher who is standing up a medium or long shot and for the entire classroom apply a wide shot. During the session the presentation techniques have to be prepared. Above all it should be relaxed, accept the slowness of the medium and only do things the medium can handle. Everything should be clearly announced if the presenter is the commentator. For a moderator it is expected to provoke interaction, to explain the rules and to be explicitly in charge. When using slides use a landscape format (3:4), do not use more than nine lines, no more than 35 characters per line, employ character size between 24 and 36 and choose a pastel shaded background.

3 Experience Analysis

The coordinator of the course was Dr. Franz Reichl, director of the Elearning Center of the Technical University of Vienna. There were some interventions from teachers of the university and there were two invited external lecturers. One of the lecturers was Ursula Vierlinger, CEO of eDaktik Learning Solutions. Each session had a duration of five hours and the lecture place was the main room of the Center. There is a dedicated site of the course with information, documents and interactive tools to facilitate the course management and attendance. The student numbers were five females and seven males from several countries, Austria, Turkey, Finland and Germany.

The student evaluation was made based on the performance during the sessions, the analysis of a project made by groups of three students, the quality of the presentation made at the end of the course, and the level of the individual debate during the presentation of the project. The assessment was made by the group of the three main lecturers, Dr. Franz Reichl, Ms Ursula Vierlinger and Dr. Alfredo Soeiro. The scheduled day of the exam created a conflict with the schedule of the lecturer from the University of Porto. The consequent decision was to make the participation of this lecturer in the examination using videoconferencing tools with the connection between the classroom in Vienna and the studio in the University of Porto. The grades were discussed and agreed between the lecturers using email in the following week.

The studio in Porto is a professional environment with qualified technicians while the classroom in Vienna was adapted to perform the videoconferencing. In the classroom in Vienna there was one mobile camera, a couple of loudspeakers, a microphone placed in the center of the room and a screen monitor to follow the students´ presentations and facilitate the discussion. The studio in Porto was equipped with two screens, one for outgoing image and the other for incoming image, with a table microphone, complete audio equipment and two viewing cameras. The session occurred on a Tuesday afternoon, on the twenty nine of November 2005 between two and six, local time, in the afternoon and without breaks. All students and lecturers were present and there were no technical difficulties with the transmission and with the interactivity.

4 Conclusions

The difficulties detected were basically a result of incomplete technical support and infrastructures. One of the aspects has to do with the difficulty in reading the body language of the students when they were doing the presentations and also when they were answering the questions placed in Porto and in Vienna. This is crucial when evaluating the assertiveness of the statements and of the self assurance of the students. Another problem was a lack of coordinated view of students and of slides. There was either an image of the students, an image of the student presenting or the slides images. It was not possible to the remote observer to choose what the target of the observation was. Therefore, there were limited viewing options of the remote examiner. Another difficulty was the follow up of the other examiners while observing the students or while doing their questions. The behavior of the other two examiners was reduced to the analysis of their speeches, not their physical language.

The improvements proposed for future examinations are especially based on this single experience and with origin on the remote examiner. The actual examining room should have more cameras with possibility of choice for the remote examiner of the preferred angle or image. There should be a camera for viewing the slides, another camera for the presenter or members of the group and a third one for observing the other examiners. It should be possible for the remote examiner to perform a close-up of the examiners and of the students so some reactions may be clear and evident to the remote examiner. Another improvement would be the use of a wide camera allowing larger views of exam room and of the audience. Undoubtedly there is a clear need of more research about use and behavior of videoconferencing on education besides delivering teaching and learning. Assessment and evaluation are important components of the educational process that can not be left out of the use of the communication and information technologies.

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