

TEACHING MANAGEMENT INFORMATION SYSTEMS: AN EXPERIENCE WITH WEBCT

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ABSTRACT

In order to improve teaching quality, web tools are becoming more important. Modern multimedia tools include a wide range of technologies to improve on-line education. At *Universidad de Cantabria*, several courses are given in a digital teaching web, named *Aula Virtual*, using state-of-the-art technologies. These new tools approach our students to a new environment, where they can obtain complementary material in the Internet that is not available in classroom or on the *Aula Virtual*. Nowadays, our group of Business Computer Science offers several subjects in *Aula Virtual* environment of our university: "Introduction to Management Information Systems", "Business Computer Science", "Management Information Systems" and "Introduction to E-Organisation". This paper explains our experience in using the e-learning platform WebCT to offer digital teaching in our subject "Introduction to Management Information Systems".

KEYWORDS

Information systems teaching, Digital teaching web, WebCT

1. INTRODUCTION

Our goal in "Introduction to Management Information Systems" subject is teaching the fundamentals of actual information systems. To achieve this aim, we teach the relational database model. Likewise, we learn NIAM methodology for the databases design and SQL standard language, for so the definition and manipulation databases. Finally, we include some lessons about distributed databases and transactional process. This subject introduces students in the theoretical knowledge of information systems: databases design, SQL standard language and interfaces, as relation tools for the users, with the development of examples in every topic and in the laboratory classes.

The classes in the computer room try to apply, in a practical way, the acquired knowledge in the theoretical lessons, making use of the Microsoft SQL Server 2000-database management system (DBMS). Students are distributed in working groups. Every group must develop the design, creation and manipulation of a Database for a specific type of business. Tools used during this project are based in NIAM methodology for the database design and the obtaining of the conceptual diagram that allows creating the database over the designed DBMS. During the three last years, teaching on this subject is complemented with the inclusion of the subject in the *Aula Virtual* environment of Universidad de Cantabria.

The aim of this integration is to provide our students with new working tools, offering them the possibility of reinforcing their acquired knowledge and their auto-evaluation with test resolution on the *Aula Virtual* environment. Nevertheless, the participation on this environment is rewarded with recognition in the final student mark as seen in the Figure 1 about the evaluation method. It may be necessary to pass the theoretical exam in June or September for passing the subject, regardless the mark obtained in the different evaluable parts.

2. VIRTUAL ENVIRONMENT STRUCTURE

The *Aula Virtual* home page offers access to all the subjects of the faculties. This page maintained for the *CeFoNT* (*Centro de Formación en Nuevas Tecnologías*) (IT Formation Centre) also offers news of this service and statistics of use. First step, a student chose his / her studies, then he / she can find the different subjects for these studies. Students are provided with a username and a password for entering this environment.

The *Aula Virtual* is supported over an e-learning platform -WebCT- and contents actually 205 courses in which take part 193 teachers and more than 7.900 students. The new server, built-in at the beginning of 2000 year, allows the continuous use of the system, 24 hours a day, seven days a week.

Table 1. Evaluation method

♦ Theoretical Exam – June or September	60 %
♦ Practical project	30 %
Data bases design with NIAM methodology and Data bases creation and operation and SQL Server 2000	(20 %)
Data bases creation and operation with Microsoft Access	(10 %)
♦ <i>Aula Virtual</i> tests	10 %

Once the student has passed the subject page with his / her username and password, he enters in the environment shown in Table 2, which components we discuss below. The page offers eight icons distributed in two lines. The more important sections are situated in the first line and include: *Objetivos -Metodología*, *Programa - Bibliografía*, *Contenidos* and Test. The second line of the page shows other icons with useful information for following the lectures in this course.

Table 2.

<i>Objetivos - Metodología</i>	<i>Programa - Bibliografía</i>	<i>Contenidos</i>	<i>Test</i>
Objectives and methodology	Syllabus and references	Lectures	Test
<i>Trabajos</i>	<i>Exámenes</i>	<i>Calendario de exámenes</i>	<i>Foro</i>
Practical projects	Exams	Exams' calendar	Forum

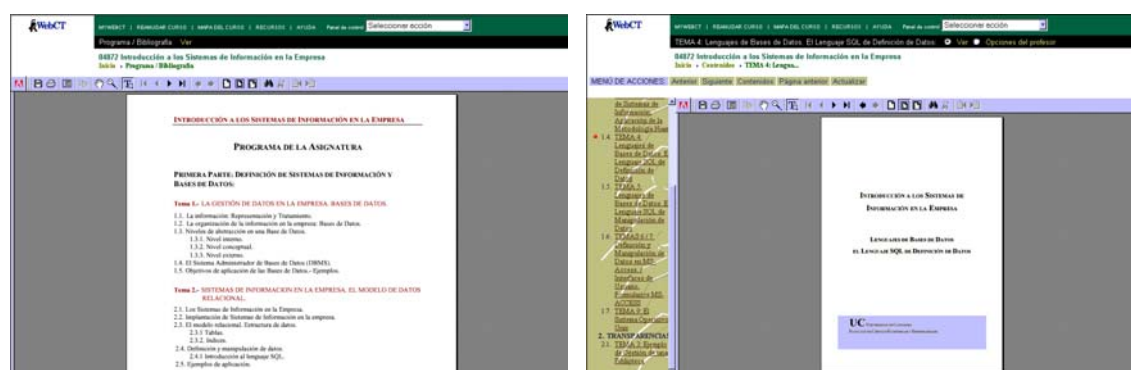


Figure 1. Programa and Contenidos

In *Objetivos - Metodología* section, students can find the high lines for the subject, in order to deepen in the following sections (*Programa* and *Bibliografía* and *Contenidos*), the theoretical part of the subject. In Figure 1, we show at left side, the syllabus and at right side, one of the topics of the subject. Students can get this material in PDF format. In *Trabajos* section, are specified the practical requirements of the projects, that students must carry out during this course. Likewise, they can find the date line for the presentation of these projects. Finally, in other page sections as *Calendario de Exámenes* o *Foro*, students also can find useful

information relative to write-text dates and the possibility of contact with teachers and other registered students in the same subject, using a chat.

2.1 Self-evaluation material

Inside Test and *Exámenes* sections, students can find support material for studying and checking the acquired knowledge. In the *Exámenes* section, we publish the last three years' exams, both for June and September periods. (Students that fail the final exam in June can pass the same subject in September.) In Figure 2, we can see one of the exam exercises of last courses. The *Test* icon offers several one-question-tests about every topic learnt during the course. This possibility of self-evaluation is also an easy way of improving the student's marks.

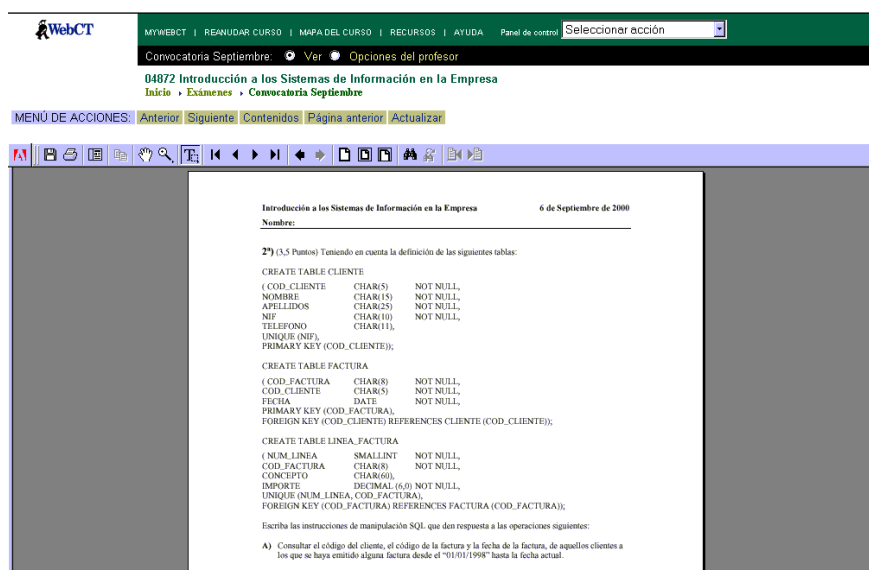


Figure 2. Exam exercises.

3. CONCLUSION

A growing number of teaching professionals use modern multimedia tools to innovate traditional lectures, making them more graphical and didactic. Widespread access to personal computers and Internet has helped to create new work areas, such as the European Higher Education Area or environments that improve students and teachers' mobility. Internet can be used to reinforce on-site education with continuous training, which is essentially distance learning. Within this framework, the *Universidad de Cantabria* began to create the *Aula Virtual* in 1999, where students and teacher can meet in a virtual environment. Solutions are provided in many different situations, ranging from long distance education, folders for different teaching material, evaluation tools, calendars, image and video database, communication tools (e-mail, forum with students) and self-evaluation tools (tests, exams, homework).

In our work we can see the net as two different frameworks, as an information distribution system or as an educational one. We focused in organising the information and learning, avoiding designing a web-based distribution system that revolves around the site more than in the contents. We tried to design a multimedia tool that could provide students with a sound theoretical background and practical training through different homework and exercises. At the end of the course, students should be able to understand and interpret knowledge in different situations. The efficiency of an on-line environment depends on the organisation of contents and materials and the amount of proposed activities.

Our marks system has 10 as the maximum score. In order to pass the exam, the student must obtain 5 points, that is to say, *Aprobado*. The text values are more than 7 *Notable* and more than 9 *Sobresaliente*. Using WebCT tool we have found that our students achieve better marks in the subject. The best mark percentage (*Sobresaliente*) has increased outstandingly in the third year of using this tool.

Among of the reason of not using this service, we find that many of our students live in loaned apartments in the city, where usually there's no Internet access. In order to minimise this problem, the *Universidad de Cantabria* offers to these students the possibility of using her computer rooms in different faculties during the timetable. Following the statistics of the *CeFont* between May 2002 and April of 2003, they have served through Internet 125.59 gigabits of contents related to *Aula Virtual* with a diary average of 352.33 megabytes. From the 2 millions of demands of pages, the 49.23% has been made from the university, and mainly from Library computers room and the students computers rooms.

Finally, it's interesting to signal that one of our subjects has been selected to participate in the *CVC* (*Campus Virtual Compartido*) also known as G9, a virtual environment for nine universities to offer subjects and interchange students.

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