

Design and Development of a Course Online Across the E-Learning Solution "Educanarias"¹

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In this paper, we describe a virtual classroom platform called "eduCanarias". It has been designed by ITC (Instituto Tecnológico de Canarias) of the Canary Island Government. It is a flexible and integrated environment for distance education. We do an analysis that includes the technical characteristics (requirements of software and hardware) as well as the human resources necessary for the use of "eduCanarias". Besides, it is exemplified by means of the description of the process of development of a specific course: "Production of Virtual Contents". TOPICS + KEYWORDS: e-Learning, collaboration, distance education, on line courses. PREFERENCE: Oral Presentation.

1. Starting context and participants.

The use of Information and Communication Technologies for the training of workers and professionals, since many years, is an increasing phenomenon (González, 1996; Tirado, 1998; Marcelo, 2001). Distance education through the Internet, also known as online education, virtual training or e-learning, is a reality which is becoming more and more known in developed countries (Belanger and Jorda, 2000; Duart and Sangrá, 2000). In the Canary Islands, from approximately two years ago, different experiences related to workers' training has been being developed using a virtual classroom called eduCanarias. We will now describe a course called "Production of Virtual Contents" using this virtual classroom.

This course was created with the intention of training professionals from different areas in the creation of virtual didactic materials. The course was created on the basis of a proposal by the ITC (Instituto Tecnológico de Canarias) by a team integrated by members of the Education and New Technologies Laboratory from La Laguna University with the

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<http://www.canarias-digital.org/educanarias/>

2. The online platform used: EDUCANARIAS.

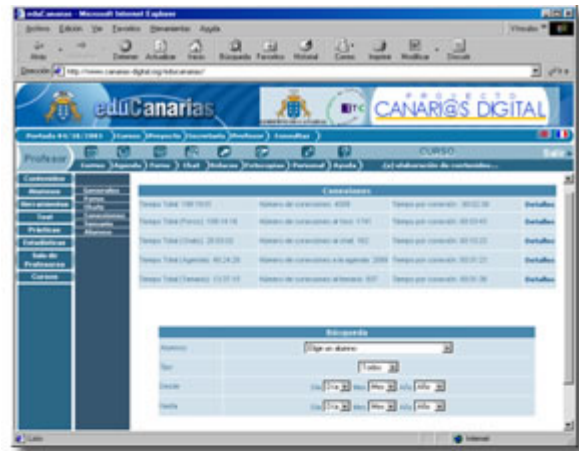
EduCanarias is a virtual classroom (Turoff, 1995; Gisbert and others, 1997; Synnes, 1997; Pimentel, 1999) for e-learning developed by a team from the Instituto Tecnológico de Canarias within the “Plan Canarias Digital” promoted by the Canary Islands Government. It was created in 2001 and since then it has implemented several courses both in the field of occupational training and labour recycling, as well as in the development of university postgraduate courses and online masters.

The main features of eduCanarias are:

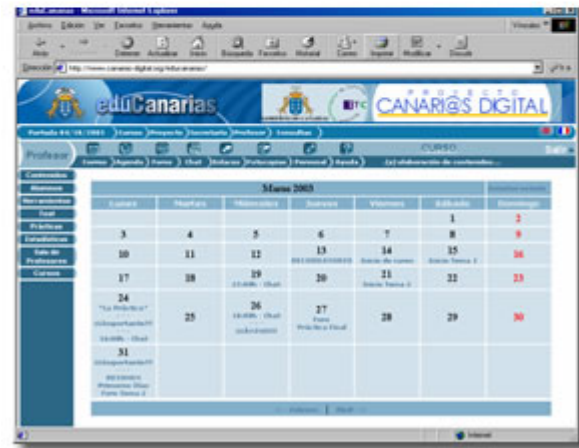
- In the area of programming and technological features: it is a platform developed with PHP dynamic web pages programming language. This feature makes its functioning possible in nearly any operative system (Windows, Linux, Unix, Solaris, etc.), apart from the fact that it can be related to the most important and most used data bases (SQL Server, Oracle, mySQL, etc.) The version used for the course was installed in a Linux server with a mySQL database.

- In the area of teachers' options: the platform offers several options for the course control and follow-up. Among them, we can mention:

- Hyper textual content import to which you can add a “statistic group” and thus have a follow-up from the students.
- The possibility of making theoretical and practical weighable tests.
- General statistic control (registered students, total connection time to the course, connection time per student, average marks and number of active users) and statistic control of forums, chats, connections and contents.
- Student statistic follow-up. Number of connections, participations in forum and chats and visits to the calendar and contents.



The platform "EduCanarias" offers a statistic control (general, control of forums, chats, connections and contents)



The platform "EduCanarias" offers a calendar including the most relevant events in the course.

- In the area of options for the student: the platform offers a calendar including the most relevant events in the course, integrated forums, chats and e-mail. Moreover, there is an area for downloading documents called “photocopier” and another area for “links”.
- Other features: the platform allows for the development and management of multiple virtual centres that offer different courses (virtual classrooms) unified in a unique secretary. On the other hand, the teachers and tutors of the same virtual centre have the possibility of using a “teachers room” which makes the communication easier within the virtual centre.

3. Description of the online course “Production of virtual contents”

Before the beginning of the course:

It is necessary to say that there were two phases clearly differentiated before the beginning of the course and its development in eduCanarias. These were:

- **Planning and content creation phase:** a team of professionals specialised in the subject developed this phase. They produced a document including all the didactic planning of the course as well as the development and scheming of the theoretical frame and its activities.
- **Multimedia design phase:** a company specialised in web design was in charge of transforming the theoretical contents into a multimedia educational material, following the instructions of the specialists in the subject.

The course development took place according to the following organisation:

- o Each course had its own co-ordinator and each unit had its own specialised tutor/teacher.
- o In the final practice, the four teachers tutored only ten students in the making of their Final Didactic Material. This personalised follow-up facilitated a better student-teacher feedback.

With the double co-ordination of the course, a permanent dialogue and reflection space was created about how things were going, how they could be improved, what decisions had worked well in a group and could work in the other one.

a) Course objectives

The general objective with which this course was designed was to train experts on contents to qualify them in the design, development and evaluation of distributed training courses using Internet resources. More specifically, the objectives were:

- Clarifying concepts such as distance learning, e-learning, virtual courses, online training.
- Qualifying in the process and tasks implied in the pedagogical design of training courses offered through the Internet.
- Offering a general vision of the technological resources (both hardware and software) needed for online learning.
- Two basic guidelines to develop tutoring actions and the evaluation of online training courses.

b) Content organisation

The course was organised around four big subjects, whose contents were the following:



- Unit 1: Distance learning through Internet. Initial concepts.
- Unit 2: Technological resources needed for e-learning.
- Unit 3: Course and multimedia material design.
- Unit 4: Developing and assessing online courses.

c) *Material for didactic support*

The material for didactic support to the course aimed for the autonomous study by the student was distributed through the eduCanarias platform. It was created following a common scheme based on Flash technology and HTML hypertext for each of the units. Such scheme consisted of:

1. Presentation of the learning objectives of the unit.
2. Presentation of the basic contents of the unit in web page hyper textual format.
3. Presentation of the contents developed for the unit in reading document format (.pdf file to download)
4. Presentation of the activities that the students should carry out.
5. Presentation of two or three complementary documents and/or documents to extend the contents of the unit.
6. Presentation of selected interesting links related to the subject.
7. Specific discussion forum about the subject for the students to participate.

Besides, within the eduCanarias platform tools there was an option called *Photocopier* where each tutor could offer more documents, links or activities to expand the contents.

4. Implementation of the course: duration, resources, students participation.

The course lasted nearly three months (March-May 2003). During this time the students have had access, through eduCanarias, both to the didactic materials necessary to follow the contents, and to the continuous tutorial support from the teaching team through the tools in this e-learning platform: discussion forums, e-mails, chats in real time. The course was supported by a server managed by the ITC (Instituto Tecnológico de Canarias). On the other hand, both the students and the tutors used their own PCs and the correspondent individual connection to Internet.

At the beginning and at the end of the course the students received an opinion questionnaire. Some of the most relevant data are the following. The students seem to be expert users of eduCanarias in an 80% of the cases. The most used tools are without doubt the forums and the e-mails. We estimate the following percentage distribution in the use of tools: Forum: 70% E-mail: 25% Chat 3% Telephone 2%

We can see a more important use of the study materials in the .pdf format rather than in the html format.

We have to mention the varying level among the students at the beginning of the course both in the use of office automation tools and in the didactic knowledge of

programming, developing and evaluating training programs. This initial difference on previous knowledge was diminished at the end of the course by compensation. That is to say, each student allows more time to what he/she knows less about and the participation in the common activities in the forums help in the making the centres of interest develop freely according to the different needs of the participants.

5. As a conclusion.

The general assessment of the course is a positive one due to different reasons. In the first place, the high participation of the students and their implication in the learning process are the main feature. It is worth mentioning that only 25% of the students withdrew from the course and 50% passed the contents satisfactorily.

On the other hand, the joint work from the co-ordinators, teachers, content designers, IT assessors and technicians, who knew well about the e-learning platform eduCanarias generated a good working environment.

As we have just said, the results were satisfactory since:

1. There was a high demand for the course because an important number of professionals enrolled; and the level of participation in the different activities included in the course (discussion forums, e-mail, navigating activities, planning and development of multimedia material) was developed by an important number of students.
2. We think that one of the most important elements in this success was the existence of a team of tutors who were regularly implied in the progress and follow-up of the course. Within this team it is worth mentioning the figure of the co-ordinator who not only encouraged the students to participate but also warned each tutor every time there was a problem.
3. For all these, in the success of online courses we cannot only take into account the characteristics of the software or platform used, and the main features of the course itself, but we should also consider the human tutoring team with which the students following online courses communicate and interact. This item related to the quality and continuity of tutoring is one of the elements which outstand in bibliography and which we can confirm with this experience.

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