The Implementation of Distance Learning Education in Technological Educational Institute of Patras – Greece

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ABSTRACT

This paper is aiming to present the experience that has been accumulated during the last three years in the attempt of Technological Educational Institute (TEI) to implement the distance learning techniques as an alternative and complementary mean of educational.

Higher education should apply the tools that make them able to solve complex problems and create models and development systems suited to each individual setting, but also should be related to the international ones. During the last ten years a set of factors have influenced dramatically the status of the traditional higher education.

These factors are the following:

1. Increase of the number of student.
2. Increase of the cost of the education.
3. Development of a national library network.

Under the pressure of the radical changes that brought in the Greek educational system of TEI of Patras the above factors put forward on experimental basis in e-learning program in order to accumulate the necessary experience.

The results of these practices are presented in this paper.

Keywords: E-learning, Engineering Education, Virtual Classroom.

1. INTRODUCTION

The unification of the European economy, the internationalisation processes of the market, the constant and continuous process of codification, storage and transfer of knowledge and functions to automatic and computer – based structures that enlarge and multiply the opportunity of acquiring information and knowledge and establish interaction and exchanges, the traditional educational systems shows their limits worldwide, since they are still based upon static and didactic models that scarcely adopt to the new educational needs of the knowledge society, [1].

The traditional role of Universities is changing and learning programmes are becoming increasingly more flexible for whole-time students, while additionally responding to the needs of education in the workplace and promoting life-long learning for all student. The aim of the project was to evaluate the suitability of E-Learning as a complementary means of education for students they don't follow regularly their studies. With this in mind the following objectives were identified:

- To gain experience of the E-Learning medium
- To quantify the time/cost implications of the creation delivery and administration of an E-Learning programme.
- To compare E-Learning with more traditional mediums of education in terms of Knowledge transfer and the learning experience.

Technological Educational Institute (TEI) of Patras consists of three schools with 13 departments. The last five years the number of students is increasingly dramatically (see Table 1). As a result of the above figures the existing infrastructure is not sufficient to satisfy the needs of personal contact between students and tutors.

1997	1998	1999	2001	2002
8.100	10.020	11.400	12.500	13.051

Table I : Number of students in TEI the last five years

TEI was committed to facilitating these changes and was very keen to evaluate the concept of " virtual campus "

learning environments. To evaluate the potential of this medium a two E-learning projects were launched in 2001:

I : Power electronic laboratory

II : Renewal energy resources course

Above projects were chosen because the tutors had already some experience on e-learning techniques.

2. DESIGN OF THE COURSES

The 21st century citizens should not only acquire specific skills, but also acquire critic and creative skills, higher education should supply the tools that make the able to solve complex problems and create models and development systems suited to each individual regional setting, but they also should be related to the international ones, therefore, it is necessary to integrate knowledge that meet international, national and local needs in curricula that transfer new values and new attitudes as it regards labor and production.

Both courses were designed as a combination of face-to-face lectures and on-line course. The reason of this hybrid approach was that the students are not familiar to e-learning material. Over 95% of the students had no experience about on-line learning. The experience of the past was that this category of students needs personal contact with a teacher. At this stage it is very important for the students to engage in learning processes through discussion and argument, working with a teacher face to face. The face-to-face lectures were not taught as a didactic presentation to deliver learning contents, but were more dedicated to answer questions referring to the learning content of the e-learning lectures and to talk about the case studies / exercises which were made available in the on-line course. This approach helped to ameliorate the problem, as students had no opportunity to ask questions interactively with the tutor. Students had the opportunity to work also outside of the premises of the campus, as the material was available for use in far remote mode (while been away from the campus, i.e. home or work Students also had the possibility to compare the virtual results from the software to the results their classmates achieved with real machines and condition.

3. METHODOLOGY - ANALYSIS

Qualitative analysis was addressed in the form of a post-pilot workshop, during which, course participants were asked to complete an anonymous questionnaire, designed by the course designers and to engage in a free discussion covering any subject matter, which they regarded as relevant to their participation in the pilot.

3.1 Course content

Power electronic laboratory: Course content was considered by the participants to be satisfactory. Most participants were out the opinion that the content would have benefited by adding pop-up glossary definitions of technical terminology.

Renewal energy resources: The participants evaluated the content to be very satisfactory.

3.2 Advantages of including a component of on-line learning

The purpose of this paper is to illustrate the impact of teaching with lectures in an e-learning environment and to show the students' reaction in using this. Teaching courses through a mixture of traditional and online methods, leads to new opportunities for all parties involved [2].

1. Participants were critical of the amount of interaction between participants and course designers, which they felt was inadequate for technical subjects. The probability that some types of interaction occur during teaching problems is highly appreciated [3].
2. Students recognized an advantage for them the possibility to access to the e-course at their own time (within the frame of the harm of the availability of the laboratories) 70% of the students worked in the PC pool at the university and in the laboratory. 20% of them used it at their home. 10% of them had a PC at home. The use of the online environment was mostly outside of the given time schedule. This fact gave to them the opportunity to develop new social relationships.
3. The possibility to repeat difficult content as many time as they wished. 50% repeated the whole sequences of the e-course. 70% replayed only sections.
4. Professors who used e-courses found very difficult to explain the new teaching technique at the beginning but after a number of courses students were familiarized and they spent only 30 minutes per face to face for answering questions about the learning content.
5. Both professors found that a good technical support during the online course and detailed introduction at the beginning of the online course is necessary [4].

4. CONCLUSIONS

The mobility found in online learning in general is facilitating the globalization of education. It must be a given reality that students are no longer a captive audience for universities. Individual programs and different choices available to them through technology create competitive challenges for institutions. The advantages of the Internet have caused E-learning to become an important topic in Universities. In the last few year a lot of project groups and networks were initiated to evaluate and implement e-learning tools and content [5].

In the "virtual" classrooms, it is possible to reproduce teaching – learning activities as it happens in actual classrooms, but it is also possible to significantly increase the amount of information and start up multiple interactions in real time among individuals belonging to different cultural levels, having different traditions and experience and coming from educational environments of different countries of the world. The barrier of the Greek language is major obstacle. Students with not so good knowledge of English found enormous difficulties to get the profit of the "international knowledge" that had been offered by the links of the offered projects [6].

In this case, E-Learning was used to improve existing taught programmes and to encourage more self-learning on the part of undergraduate students.

Though university students are active and motivated, they need real and direct contact in order to proceed. Otherwise they may fail with their task and lose their motivation and frustrate easily. In virtual learning context interaction keeps studying alive [7].

REFERENCES:

[1] Garito Amata Maria (2003) " From NETTUNO – Network per l' Universita Ovunque to LIVIUS- The European Virtual Distance University to MED NET 'U – The Euro-Mediterranean Distance University ", International Conference on Network Universities and e-learning, Valencia, Spain.

[2] Goertz L. (2002) " Sieben Thesen zum interaktiren" Lernen in : Neumann R., Nacke R., Ross A. (Eds):

[3] Dillenbourg P., Baker, M., Blaye, A., O' Malley, C., (1995) " The evolution of research on collaborative learning" In E. Spada P. Reinoon (Eds)
[4] Hall, B. (1997), " The Web-Based Training Cookbook, Everything you need to know for online training" John Wiley, Chichester.
[5] Clark, R.C., Mayer, R.E., (2002) : E-Learning and the Science of Instruction : Proven Guidelines for Consumers and Designers of Multimedia John Wiley ; Chichester
[6] Hatziprokopiou, Marios, (2003) " Engineering Training over the Network in a Technological University", International Conference on Network Universities and e-learning, Valencia, Spain.
[7] Learning in Humans and Machine: Towards an interdisciplinary learning Science, Oxford : Elsevier (p.p. 189-211)