Abstract: Information and Communication Technologies (ICT) provide new possibilities for the creation of innovative effective environments of teaching and learning, by re-defining the educational frameworks and by deploying new learning facilities. The various platforms of tele-education, as those of asynchronous tele-teaching, can be used for the development of environments of remotely teaching and/or as additional tool of the conventional educational process. Primary objective of the present empiric research is the evaluation of asynchronous tele-education at TEI (Technological Education Institute) of Crete and the emerging possibilities for the improvement and the readjustment of traditional teaching. Basic methodological tool of our research are the questionnaires that were addressed to the students of the system. Our analysis was based on qualitative and quantitative methods. We present a theoretical approach of distance education and we study the new roles and the attitudes of the student-user, as they are shaped in a new educational environment. Among the first results that emerge, a distinguished role seems to play the pedagogic framework for the effective exploitation of ICT in an institution of tertiary education. Through the platform of asynchronous teaching, the relation student-professor appears to be often more active.

Keywords: Distance Learning, Asynchronous tele-teaching, e-class, ICT
1. INTRODUCTION

Faced with a rapid change in our environment and educational structure, the 21st century can be characterized as the information and the knowledge-based society [2], [4], [8]. In this society, schools face challenges to bring up students with intellectual creativity and critical thinking ability [3], [8]. Modern students should adapt themselves to the new educational requirements and the ability to collect, develop, exchange, store and manage information from various and dispersed data, is essential [8]. Information is the combination of human ideas and understandings about the data that we observe in the world around us [2]. In our knowledge-based information society, both society and individuals need ongoing learning systems. In a conversional learning structure there are limitations (a) to the number of physical class that can accommodate learners (b) to the school timetables and (c) educational material. A constituent part of the knowledge-based society is the use of alternative educational approaches in time, space and educational resources [3], [8].

Technologies are the ways in which humans alter things in their environments to make life easier [3]. Information technologies are the ways in which humans alter things in their environment to better record, manipulate and communicate their ideas and understandings [3]. On the other hand the use of technology means should not be exploited in a universal manner [7]. We have come to believe that face-to-face communication plays a central role in learning. On the other hand, we have become even more impressed by the power of ICT for the improvement of education [2], [4]. The complexities of ICT use in class challenge students and tutors who must be careful and avoid confusing easy access to resources with learning process. A general goal of distance education is to create environments that both learners and instructors seek to promote new collaboration framework, allowing students to learn from the course materials, the instructor and each other. In this paper, we present the different perspectives that emerge by the use of asynchronous remote teaching practices.

2. FRAMEWORK

During the last years the possibility of attending distance learning educational programs has increased. The rapid development and increased use of ICT has contributed to this, creating learning opportunities in cyberspace. In the process of collecting, analyzing and processing information and sharing ideas with others, ICT serve as essential enabling tools [4]. The use of ICT is becoming a part of everyday life in schools.

Some examples of the current trend are the growing use of several web-based platforms and learning systems in distance education. The various infrastructures of tele-education, as those of asynchronous tele-teaching, can be used for the development of remotely learning environments and/or as additional or main tool of the conventional educational process [5], [6], which requires the natural presence of student and teacher in the class.
Nowadays, students have increased possibilities to collaborate and communicate with each other as well as with the tutor, and eventually learn through internet-based systems. This kind of educational approach, that supports distance-based teaching, is characterized by reduced number of physical gatherings and by independence, regarding time constraints. The flexibility in distance education has been put forth as an example of how citizens will be given larger possibilities to study and educate themselves [2], [3]. These environments, often called ODL (Open and Distant Learning), provide new opportunities for teaching and learning and a sufficient variety of digital-based means for both students and tutors.

In ODL platforms, students must be at the center of their own learning (student-based learning) and these systems must be well designed to facilitate learning process. ODL systems should offer new educational environments, where anyone can learn anytime anyplace and get quality education. Distant learning can mean asynchronous (educator’s absence) or synchronous (educator’s presence) facilitation of distance learning through the network. However, as educational institutions attempt to rapidly meet the demands for distant learning, the quality of online experience varies across, and often within, these institutions [5], [6]. Many online courses still focus on presenting online content only, with minimal opportunity for interactions and active learning procedures. On the other hand ODL has the potential to provide students with access to up-to-date any information, anywhere and anytime, promoting active and independent learning.

Introducing a Learning Management System (LMS) in the educational process, we argue that this kind of system is not limited only in a strictly determined role, but it is also functioning as a new communication means. Therefore, it is important to examine closely the use of these platforms at all educational levels.

Learners must play an active role in learning process. Tutor’s main role in teaching with the assistance of a computer based system should not only focus on delivering knowledge to learners, but also help students to find their own way to knowledge. In the information age, enhancing learners’ autonomy and ability to learn is more important than acquiring plain knowledge.

3. METHODOLOGY

The platform studied in our research is a typical asynchronous tele-teaching platform, which supports synchronous ways of communication and authorised users can access it at http://eclass.cs.teiher.gr web address. Essentially, there are two kinds of interaction regarding e-learning: (a) student individually interacting with learning material and activities; (b) student interacting with others about the content. We argue that both types of interaction are necessary for efficient, learning in an ODL environment. In this study we try to identify: (a) students’ attitudes in a distant learning environment in comparison with their experiences in conventional learning environments, (b) their emerging new roles, (c) the advantages and disadvantages from the students point of view of the use of this platform and (d) the proposals of
students for further exploitation of asynchronous education at TEI of Crete. In this study we refer on (a) and (b).

Our study was made up of 5 semi-directed interviews with students and 129 questionnaires for students. At first, we conducted interviews with students in order to generate items for the questionnaires. Furthermore, we were guided to a first version of the questionnaire consisting of closed-form items and open-response questions. The structure of our questionnaire covers the following three main categories of questions for the platform: (a) exploitation issues of the e-learning platform, (b) assessment of the e-learning platform services and (c) prospects and proposals [5], [6]. The closed-form items of the questionnaire were rated using a Likert scale that ranged from 1 to 5 and contained student’s demographic items regarding sex, year in the educational program and familiarization with ICT. All participants are active users of our e-learning platform, while the survey was conducted over a period of nine months (September 2004 - May 2005).

4. RESULTS

The particular platform we study consists of a multilevel organization structure and gives to the students the opportunity to organize their study using the educational material presented through the network. Additionally they have the ability to interact synchronous (chatting) or asynchronous (e-mail/forums) with the tutor and other colleagues.

The first analysis results show that the frequency of platform use is not encouraging, as there the percentage of rare use is rather big (Fig. 1), maybe, because the exploitation of the platform is fairly new in TEI of Crete [6]. On the other hand it seems that there is a satisfactory communication level between student-tutor (Fig. 2).

![Figure 1. Frequency of platform use](image1)

![Figure 2. Communication with tutors](image2)

The “student-users” argue that they are more stimulated when they have to attend a course through the e-class platform (Fig. 3); it may be due to the fact that ICT always attract young population [2], [8]. Students also believe that the instructor is more
energetic in an asynchronous learning environment [6], but they do not seem to share this tendency for themselves (Fig. 4).

![Figure 3. Stimulated student interest](image1)

![Figure 4. Students attitude](image2)

The majority of students regard the platform’s services as a support and complementary tool for the conventional way of education (Fig. 5). Their beliefs, however, when considering the platform’s services to be used as the basic educational tool, are strongly divergent (Fig. 6).

![Figure 5. LMS as supplementary tool](image3)

![Figure 6. LMS as basic tool](image4)

We argue that further research is required to understand the roles and the demands of teachers in order to find out the conditions in which students are less dependent on teachers. In parallel, with use of ODL environments as LMS systems, we ought to study more deeply the complex pedagogical issues involved in the uses of ICT.

5. DISCUSSION

We argue that ODL platforms will become an increasingly important aspect of all institutions of tertiary education in the future. We can assume the different forms of interactions in an ODL environment: (a) between students and course materials; (b)
between students and learning activities; (c) between student and tutor; (d) among students. Interacting with content actually means actively processing and combining this content with prior knowledge [4]. In our study we find out that access to distant resources is rapidly becoming commonplace but the understanding of how to make good use of these resources, is only slowly emerging. Platform’s users consider that they are more active and productive in the asynchronous e-teaching environment, although they have not fully exploited it yet [5], [6].

General speaking, the stimuli offered to users of such virtual learning environments are more comparing them to the ones of traditional teaching. It is more important to stretch our efforts to the casual use of such systems (service) in accordance with the emerging pedagogical issues. The convergence of ICT and pedagogy combined with the Internet revolution are establishing distance learning as the indisputable pioneer of major and radical changes in the wider educational environment. From this perspective, the ideal educational system might well be an amalgam of traditional schooling and distant learning in which the learners’ needs and abilities can be matched to the best available educational practices.

6. REFERENCES