

# A Web Based E-Learning and E-Psychology Modular Environment

Athanasios Drigas,  
N.C.S.R. 'Demokritos'  
Institute of Informatics and  
Telecommunications  
dr@imm.demokritos.gr

Leyteris Koukianakis,  
N.C.S.R. 'Demokritos'  
Institute of Informatics and  
Telecommunications  
kouk@imm.demokritos.gr

Yannis Papagerasimou  
N.C.S.R. 'Demokritos'  
Institute of Informatics and  
Telecommunications  
ypapa@imm.demokritos.gr

## Abstract

*This paper presents an electronic environment which supports activities of e-learning, as well as activities of e-psychology. This e-environment supports synchronous and asynchronous activities of teaching and learning through communicative and informative tools and services. These "tools and services", are constructed in a powerful modular environment which can be adjusted and modulated to support different scenarios – policies of teaching, learning and manipulating the knowledge circle, in an electronic way. On the other hand, the ideas of learning, of transferring the knowledge, of analyzing the end user (learner) needs, of analyzing the status and end user development, on supporting synchronous and asynchronous communication, between the learner and teacher – professor parts, are also included in the e-psychology circle and are procedures of it. As a result the e-learning and the e-psychological actions, like psychological support and consultation, are parallelized, and can be both supported by the aforementioned e-environment.*

## 1. Introduction

The Internet and the World Wide Web are changing the very nature of our society in ways unparalleled since the industrial revolution. This is affecting local, national and global economies and their infrastructures. Information and learning content is available at any time, at any place, and to any Internet user. This is creating a tremendous opportunity for academic institutions and industrial training organizations to provide on-demand web based education and training through course delivery platforms such as the Ariadne Web based learning environment and electronic textbooks through the use of authoring tools such as InterBook [19,20]. Despite this, e-learning and e-psychology cannot fully replace the traditional learning and counseling processes. As a result, a new scientific

term was introduced namely, hybrid learning and hybrid psychology. The scientific term hybrid learning suggests the integration of e-learning with traditional learning processes, while similarly the term hybrid psychology suggests the integration of e-psychology with traditional psychology processes.

Psychology, as well as other disciplines, is not unaware of the rapid advances of the Informatics Science as well as its positioning as a vital tool for study and development of all knowledge and science fields [1,2]. Hence, psychology makes use of this tool to create programs for psychological intervention, as a means of prevention [3,4,9,10,11], assessment [5,6], orientation, and specialized counseling. The most widely used means were e-mail, web pages and chat rooms. At the same time, these information tools are used for learning by offering teleconferences, forums, virtual classrooms, and other channels [7,8].

There is concern about the quality of the information obtained from websites, as anyone can publish information on the Internet [12,13,14,15]. However, in one study that sampled actual patients as compared to researchers conducting web searches, supported persons used many different websites for health information and consistently rated as their favorite websites those recognized to be reputable (i.e., from prominent universities, government organizations, or other recognized prominent health organizations) [1]. Also, the health information on the Internet has a positive psychological impact on those who use it, as the use of the Internet for health information among supported persons was found to be associated with greater social support and less loneliness [16]. All this suggests the need for clinicians to recognize this new medium and incorporate it into their assessment and treatment methods.

In addressing the above context, we developed a course delivery platform for e-psychology that is based on the active utilization of:

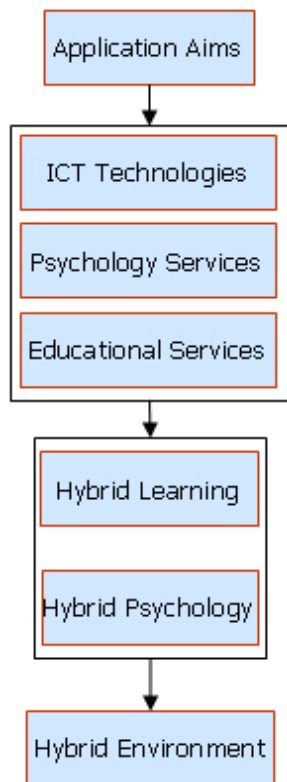
- the principles of the learner-centered paradigm of education and training that lead

to the highest possible learner convenience in learning

- the principle of modularity of learning content (based on the reusable learning objects concept) that leads to great flexibility in composing different customized versions of an online course for various groups of trainees with different educational backgrounds, learning objectives, technical skills and past experiences
- an innovative Web-Based Instructional (WBI) tool that uses web-based streaming multimedia and various communication technologies and offers both online and offline modes of learning content delivery.

## 2. Abstract Level Description

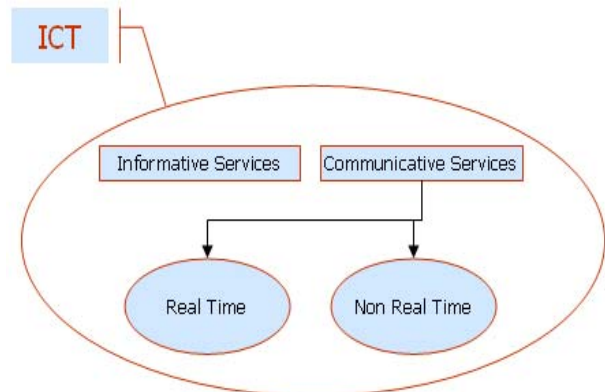
The aim of the platform is the integration of the ICTs with the traditional learning and psychology processes for the development of a hybrid system that supports hybrid learning as well as hybrid psychology (Figure 1).



**Figure 1. Logical structure**

As far as the ICTs are concerned they are distinguished into two major service categories. The

“Informative” and “Communicative” services. The latter are divided into two services subcategories. The synchronous and asynchronous services, which determine the terms “synchronous” and “asynchronous” environments (Figure 2). These technologies were used for the development of the hybrid system imprinting the traditional learning and psychology processes with “synchronous” and “asynchronous” learning and counseling tools in the system.

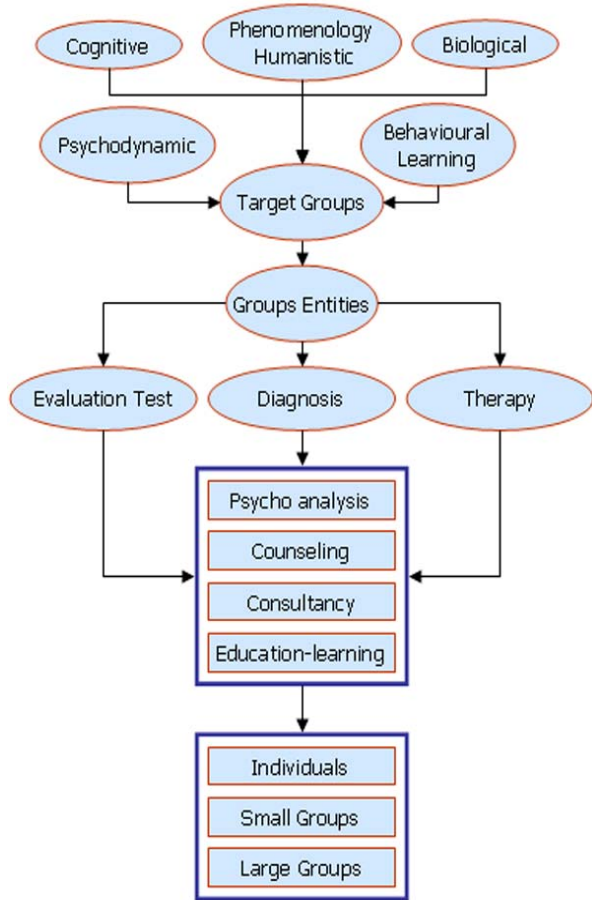


**Figure 2. ICT services**

Psychology is distinguished into six major branches with respect to the cause of ones unusual behavior. All psychology branches refer to specific target groups based on unusual behavior problems. The method that each branch uses differs from the others while the processes (evaluation tests, diagnosis and therapy) are the same in all branches (Figure 3).

The possibility of supporting personal teaching – learning as well as supporting classes or larger entities like levels of learning or virtual schools finds also similarities and proportions to the hybrid psychological circle, with the possibility of supporting psychological consultancy in a personal way or in a small group, or larger handling entities of them, like therapy directions, or virtual psychological health centers.

The result of the ICT integration with the psychology processes is depicted in figure 4. This integration of the psychology branches in a web-based environment is available to the Internet user. The methods and processes that each branch follows are materialized through electronic tools such as: discussion forums, message boxes, video and audio conference etc. Similarly, the learning methods and processes are introduced into the same web-based environment through informatics tools.

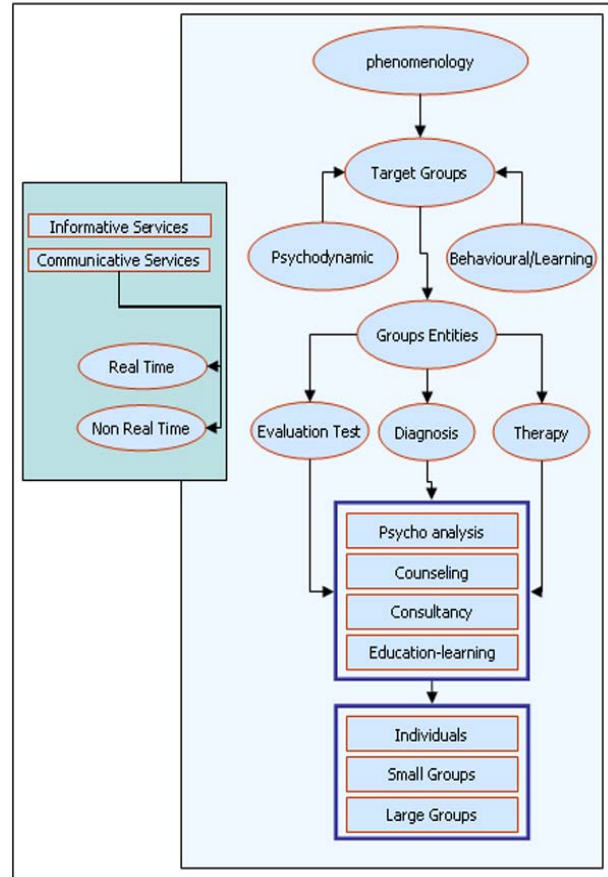


**Figure 3. Psychology services**

Moreover, the user levels and user interfaces of the electronic environment are parallelized as follows: the e-learning and hybrid learning administrator, instructor, student and user, support similar actions with the e-psychology and hybrid psychology administrator, psychologist, supported person and user.

Finally, the seminars, classes, courses and educational material from the hybrid learning circle, are supported by the same tools in similar procedures with the therapeutic entities, small groups, therapeutic process, and supporting material, from the hybrid psychology circle.

The specifications of the user levels, the e-content and the e-tools in an e-psychology and hybrid psychology platform can be easily implemented through a simple correspondence of the psychology ontologies to the generic e-learning and hybrid learning ontologies.



**Figure 4. Hybrid psychology structure**

The way that the e-learning and hybrid learning tools are related to the correspondent e-psychology and hybrid psychology tools, is presented in figure 5. From the figure above (Fig. 4), it is obvious that the roles of the “instructor” and the “student” are transformed into the roles of the “psychologist” and the “supported person” respectively. The “classes” are turned into “small therapy groups” and the “courses” into “supporting material”. The “consulting material” (examples, exercises, multiple choice tests) correspond respectively to diagnosis, educational exercise for treatment and diagnostic tests. Finally, all the tools (web directory, glossary, references, video and audio lectures, events calendar, news, announcements, mailing lists, e-library, message box, e-mail, video and audio e-mail, video and audio conference, discussion forums, instant messaging, chat, and telephony) can be easily applied in both platforms.

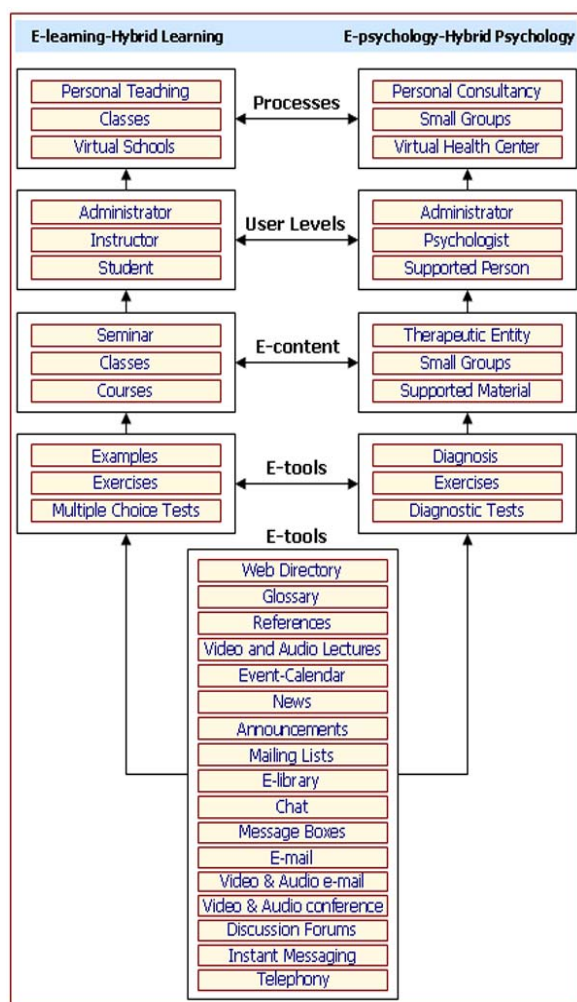


Figure 5. Modular environment

### 3. System Analysis

#### 3.1. Environment Tools

The environment includes tools that offer flexibility and adaptability depending on their use. The design of these tools was based on existing web services, such as discussion forums, chat, message box, e-libraries, which are widespread in the public web community. These tools are distinguished into two major groups: “Informative” and “Communicative”. The former are divided further into two subcategories: the “Informative” and the “Supportive” tools, which include services related to the educational-supporting material and its presentation. Similarly, the latter, are also divided into two subcategories: “Synchronous” and “Asynchronous” tools, which include services that allow the communication between different user groups (users belonging to a different session level).

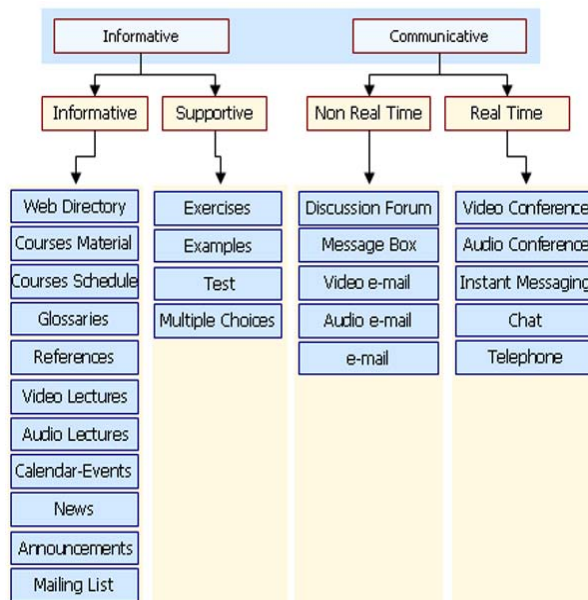


Figure 6. Informative and communicative tools

The environment offers the possibility of management of these tools according to the user groups’ permission. More explicitly, the “Informative” tools are the following: web directory, courses material, courses schedule, glossaries, references, video and audio lectures, calendar-events, news, announcements, mailing lists. On the other hand, the “Supportive” tools are: exercises, examples, Multiple Choice Tests. As far as the “Communicative” tools are concerned, in the “synchronous” subcategory the tools are: video and audio conference, instant messaging, chat, telephony. On the other hand the “asynchronous” tools are: discussion forums, message boxes, e-mail, video and audio e-mail. The aforementioned information is depicted in figure 6 and relates to both hybrid learning and hybrid psychology. Finally, it must be noted that the environment relates the tools to the educational material courses according to the specific user level permissions. These levels are analyzed in the following sections.

#### 3.2. User Levels

Four user levels are distinguished in the environment, each of which uses different supporting tools. Depending on the corresponding use, these levels have a different role: Administrator, Instructor-Psychologist, Student/Supported Person and Visitor. The user levels for hybrid learning and e-learning correspond to the relative user levels of hybrid

psychology and e-psychology. That is to say, that every administrator whether for e-learning or for e-psychology has the same tools and services at his/her disposal as well as the same restrictions. Each of them interacts with the other through the “informative” and “communicative” tools related to each level.

### **3.3. Administrator**

The administrators coordinate and manage the corresponding application through the corresponding administrative tools, depending on whether they are e-learning or e-psychology administrators. They also determine which user level-group has the permission to use the corresponding “Informative” and “Communicative” tools. Moreover, the administrator can communicate with the instructor or psychologist in order to be kept informed about the progress of the Instructors’-Psychologists’ courses and sessions.

### **3.4. Instructor/Psychologist**

In this level, the instructors determine the educational and consulting material depending again on whether they are e-learning or e-psychology instructors. In addition, they also determine the development and the way that the material will be presented to the students/supported persons and to the entire Internet community. The instructors are able to produce the e-content of their course, aiming at the better comprehension and assimilation of it from their students/supported persons as well as the visitors. Finally, the communication between the instructors and the students/supported persons aims at the resolution of questions that rise during the courses and sessions.

### **3.5. Student/Supported Person**

The students/supported persons determine the successful development of the seminars and courses. Moreover, they read the educational-psychological material registered by the instructor, and communicate and pose questions to the instructor who is responsible for resolving the exercises and multiple choice questions. A remarkable fact is that the students/supported persons have access to all the information and services, regardless of when they undertook a certain course-session, which results in the better development and understanding of the courses-sessions.

### **3.6. Visitor**

In this level, the visitors can easily browse the e-content of the corresponding courses-sessions. The innovation of this level is the fact that the visitors can have access not only to the consulting material for each course-session, but also to the discussion forums between the instructors and the students/supported persons (carried out during courses or during practical applications and which include general and not confidential discussions). Finally, this level follows the philosophy-standard "knowledge-access for all" giving the permission to the random visitors to obtain the knowledge of their object of interest. The visitors can have access to non confidential information only, which is available for educational purposes. Confidential information is protected and can only be accessed by authorized people in order to respect and protect personal information.

## **4. Pilot Project**

The presented environment was developed under the framework of the Greek research program, namely, “Conditions Improvement of Inclusion to Educational System of Individual with Multiple Handicaps” that was funded by the O.P.E.I.P.T. European Community Program (Operational Program of Education and Initial Professional Training) [18]. The projects’ main objective was the training of special education teachers on multiple handicaps issues. The work included two seminar periods: “training” and “specialization”. The former included training in physical classrooms while the latter included training in physical classrooms as well as e-learning. This hybrid environment was parameterized and configured properly, to conform to the project specifications and needs. In this way, it assured the distance training form and also supported the dissemination of new ideas and knowledge in the special education community.

## **5. Conclusions**

The main advantage of the discussed platform is the fact that it offers the pioneering experience for either pair “teacher-student” or “psychologist-supported individual” to span two completely different worlds, the physical and online worlds, simultaneously. Undeniably, hybrid learning and hybrid psychology improve the traditional learning courses and psychology session’s cycle. Moreover, what they specifically do is that they completely transform the cycle, as only a 10% of the traditional way of working is used, while the remaining 90% is all ICT based. The reason why 10% of the traditional cycle is kept lies in that it works as a feedback for the e-learning and e-

psychology operator in order to make fine tuning and high quality adaptation of the procedure to the end user needs.

What makes hybrid learning – psychology worth while and innovative, is the fact that it gives the instructors (whether teachers or psychologists) the unique opportunity to experiment and incorporate e-services in their courses-sessions. This has immediate results, in that it enables them to carry out their respective work traditionally, slowly incorporating technology while at the same time, it offers the opportunity to make their work more appealing and interesting for them as well as for their students/supported individuals. Undoubtedly, the use of ICT enhances the learning-psychology environment a great deal, making the learning-psychology process a whole new and beneficial experience for all.

This paper has made an effort to underline and pass the clear message that e-psychology is a new evolution of psychology and it is based on the techniques, tools and services of the well known e-learning procedures as it has been pointed out. Moreover, it is obvious that this paper underlines the possibility of e-psychology to be used for both technical applications as well as for didactic purposes.

The main contribution and innovation of this environment is that for the first time an organized e-psychology environment is presented in a methodical way, which exploits all of the informative and communicative abilities of the ICTs and proves that these procedures are identical and parallel to the corresponding procedures of e-learning. E-learning has successfully proven that it suits well the teaching and learning procedures. What is hoped for is that this e-psychology environment will be able to cover the needs of the psychologists as well as the supported persons in all the fields of psychology.

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