

# CHAPTER 1

## Introduction

*[We stand in the beginning of a great educational revolution, the most significant since the invention of typography. The strongest point of this revolution is the computer. Until the year 2000, the main teaching tool in every stage of education and every subject, will be interactive computer systems]*  
*Al. Bork, 1978, Speech in the American Physics Teachers Association*

### 1.1 Contemporary views of Education

Today, less than a year before 2000, Al. Bork's views [Bork, 1997] should be considered rather too optimistic, since computers are far from conquering the role he predicted in the contemporary school. Nevertheless it is certain that in a slow but steady pace computers have taken a place in the educational process and can be relied to improve it. The implication of computers in the educational process has been increasing daily with the use of personal computers in an increasing number of schools and the establishment of Information Technology laboratories [Solomon, 1996]. Information Technology is now coming to support teaching, as a result of scientific research (Computer Based Instruction, CBI and Computer Aided Instruction, CAI).

Science teaching is considered invaluable in the educational process, since it advances learning, develops mental abilities and promotes knowledge of physical environment. Children have an early perception of the natural world, develop ideas, interpretations and correlations for physical phenomena. Students have a vague knowledge for these subjects and teachers must analyze students' ideas and develop a new level of understanding, that is based upon scientific knowledge.

Learning can be described as the procedure of acquiring, understanding and using information. Cognitive psychology looks at the learning process through a different point of view and studies the way people learn. Man is not a pathetic receiver of environmental stimuli, but has an active role. The need for supporting tools is obvious, not only in the first stage of the learning process, which is selecting and collecting stimuli, but in promoting the active participation of the students as well.

ODL has become a very interesting topic in the past few years. Whether it is called distance learning, directed learning, assisted learning, distance education, or some other name it describes the same procedure: It is the acquisition of educational or training information, including the instruction and experience, from the learners, although they are physically distant from the source of that information [Porter, 1997]. ODL is an important way for educational institutions, from elementary schools to colleges and universities, to offer instruction to a new market of students. In the past years some potential learners faced difficulty fitting traditional courses into their schedules either because they lived too far from the site offering the instruction or the costs were prohibitive for them to take the courses they were interested in. ODL projects can be designed to meet any group of learners' needs. The technologies used in ODL, the structure of the course or a project and the methodology followed can be varied to meet a particular group's interests. It has to be noted that although the approaches for designing an ODL project are many, the success of the project depends on effective planning to meet a market need.

## 1.2 The SOCRATES Program

ODL projects can be expensive as they are based on online (computer based) information and tools. Any institution or organization which plans to develop an ODL project has to construct a detailed cost-plan which will include all the proposed activities. In many cases it is needed to find sources of funding beyond those the institution is able to provide. Grants offer several good possibilities for partial funding, promoting ODL in many ways. Organizations which provide grants may promote a specific type of project, may request use of a specific technology or development of advanced educational materials and tools by emphasizing research or applications of research. Grantors may also require collaboration among educational organizations and/or businesses from different countries or encourage individuals to develop innovative ideas. The e-Hermes project was developed under the framework of the European SOCRATES program, [<http://europa.eu.int/en/comm/dg22/socrates.html>], ODL action, that requires the collaboration of institutions from at least 3 European countries. The SOCRATES program is based on articles 126 and 127 of the European Union convention. Article 126 specifies that EU "*contributes to the development of a high level education*" through a variety of actions that must be materialized with close cooperation among member states. One of these actions is the development of a "*European dimension*" in education, especially by promoting teaching of foreign languages, encouraging students' and teachers' mobility, ensuring recognition of studies in other participating countries, developing cooperation in the area of distant learning, and intensifying exchange of information and experience regarding educational systems in all union dominion.

The specific goals of the SOCRATES program, as mentioned in the decision decreeing the program, are:

- development of the European dimension in studies of any level, so as to stabilize the spirit of European nationality, based on the cultural heritage of member states,

- promotion of quantitative and qualitative improvement of knowledge of European Union languages, especially of those which are less spread and taught, so as to improve understanding and solidarity among people constituting the European Union, as well as to promote the intercultural dimension of education,
- promotion of wide and intensive cooperation among foundations of member states, in any teaching level, so as to make use of their intellectual and pedagogical background,
- encouragement of teachers' mobility, so that studies acquire a European dimension and their skills are improving in quality,
- encouragement of students' mobility, by allowing them to materialize part of their studies in another member state, in order to establish the European dimension in education,
- encouragement of students' relations in European Union level, parallely promoting the European dimension in their education,
- encouragement of academic recognition of certificates, recognition of study periods and periods of acquirement of other qualifications, aiming to the development of a European open field of cooperation in the area of education,
- encouragement of ODL during the actions of this program,
- promotion of exchanging information and experiences, so that the variety and specialities of different educational systems in various member states may become sources of intellectual enrichment and mutual encouragement.

In order to materialize the above goals, SOCRATES program provided help to the actions of seven sectors:

- Third level education (ERASMUS),
- School education (COMENIUS),
- Advancement of foreign languages learning (LINGUA),
- Open and distant learning (ODL),
- Adult education,
- Exchange of information and experiences regarding educational systems and educational politics,
- Coplementary measures.

Most of the SOCRATES program actions provide help for some of the following sectors:

- creation and promotion of plans, networks, collaborations and cooperations among states,
- development of curricula, training and teaching material and other educational products,
- exchanges and mobility,
- interstate training courses for the educational staff,
- visits for facilitating preparation of plans or exchange of experiences,
- studies, analyses, printed guidelines and data collection activities,
- evaluation,
- dissemination of results.

### **1.3 Promotion of ODL in SOCRATES program**

Promotion of ODL [<http://europa.eu.int/en/comm/dg22/socrates/odl/ind1a.html>] is about the use of new methods and techniques aiming to make learning more flexible in matters concerning space, time, selection of subject or teaching tools, so as to improve the quality of traditional teaching or/and distant access to educational systems.

The concept of promoting ODL has a double meaning in SOCRATES program and concerns:

- introducing new ways of “open” learning through all the provided teaching mechanisms, mainly multimedia products and services, anywhere that a form of education can take place.
- providing services of “distant” learning.

The main goal of this action is the development of European co-operation in:

- Embodying new technologies and media in the educational process, which includes education of teachers and administrators.
- Promoting and providing ODL services.

This action is taking special measures to ensure that the educational community, in a wide point of view, will benefit from this work and that during the process of inventing and materializing educational software and multimedia, this educational community is going to play a full and definitive role.

While support for the use of new technologies and media in all the other actions of SOCRATES is mainly aiming to their implementation in a special

structured framework, plans suggested in ODL have a clear multiplying effect and show an expected strong impact in conveying experience and the way of using new types of media and technology, under different circumstances and different levels of the educational process. Information and communication means are going to arise from these plans, as well as services which will encourage the educational community to apply innovative approaches in learning or/and model training systems, which may be utilized and spread all over Europe.

European level cooperation in the area of educational software and multimedia is still too incomplete, to contribute to noteworthy financial savings. This is why one of the main goals of the present action is to promote formation of services to support multimedia in many basic sectors, like education of teachers, and to enhance the politics of public and private sector, regarding development of educational multimedia, by providing initial support to the future self-sufficient plans.

The present SOCRATES action, especially designed for promoting ODL in the concept described above, includes measures that focus on the promotion of European cooperation in the following sectors:

- use of ODL methodology, including new types of media, information and communication technologies, for improving the quality of “conventional” education,
- use of distant education services, as a means to overcome obstacles of physical mobility and to have access to education.

The main priorities for fulfilling these targets, include:

- enhancement of cooperation among every organization and foundation that is part of these sectors in Europe, in any stage of education,
- wide spread of good practice and technological knowhow in Europe, based on both traditional and new approaches, and dissemination concepts.

Pursuing this goal, this action especially encourages the following:

- development of experimental model plans, which accurately evaluate the impact from educational use of new media and new information and communication technologies,
- development of innovative concepts, methodologies and approaches for the design of high quality educational software, as well as for the enhancement of teachers’ participation in inventing educational multimedia and ODL services,
- enhancement of teachers’, educators’ and administrators’ abilities, regarding the use of innovative methods and technics,
- promotion of systems for exchanging information and educational and training material amongst partners,

- accommodation for the recognition of qualifications acquired through ODL.