

## Romanian universities face to the networked learning reality

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### 1. Introduction

This paper reports some of the findings and problems of a ODL Socrates project which is conducted in the POLITEHNICA University of Bucharest and is entitled: "*FAVIR-international virtual network for the future enterprise*."

The virtual network *FAVIR* founded in 1999 between 4 organizations in Europe (3 universities and one organization specialized in multimedia and new technologies) will improve the relations and experience in the networked learning between Greece, France, Italy and Romania.

The object of the project is to integrate the partners, the pedagogical experience specific to each of them and to disseminate ideas and experiences in the networked learning ([favir@egroups.com](mailto:favir@egroups.com)). The fields of activity are very important because they define a virtual network, which correspond to the virtual enterprise principles.

Politehnica University of Bucharest (figure 1) was founded in 1818 and it is the most great and important technical university in Romania. The university contains 12 technical faculties in all the fields of activity and has 25 000 students, 630 postgraduates students and 1800 Ph.D. students. Teaching process is sustained by modern equipment and materials, the most parts of them financed by international project like Tempus, Leonardo da Vinci, Erasmus-Socrates, etc. or financed by contracts with Romanian Ministry of Industries and private companies from Romania. Also, we benefit of the donations from important companies like: Siemens (Germany), Mazak (Japan), Autodesk (UAS), AT&ISTEL (USA), Digital (USA), National Instruments (USA), FESTO (Germany).

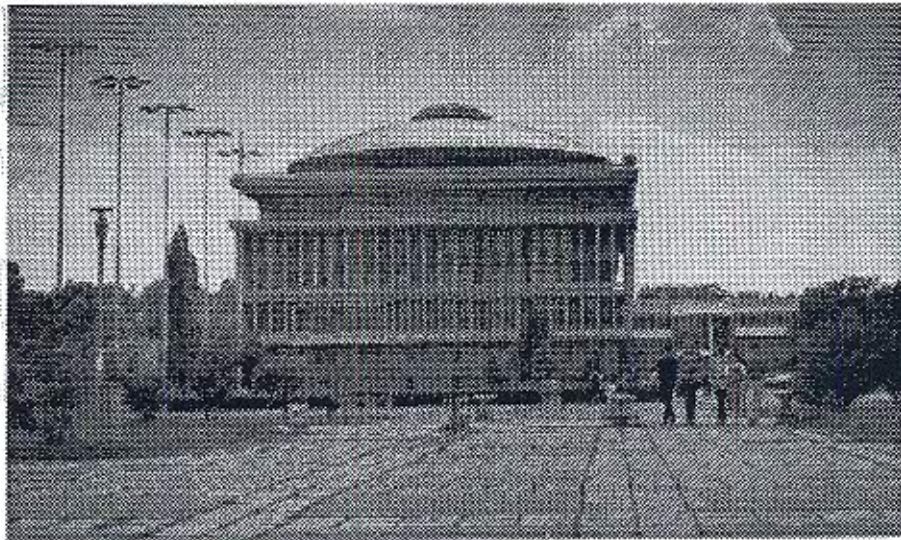


Figure 1. Politehnica University of Bucharest

Nowadays, when the economic and industrial sectors are continually changing, the students have to be prepared for a very active life. According to these very rapid changes, a constant and good preparation may be the key to a motivated student (employee) activity.

The project *FAVIR* will form an active virtual team working on the Internet and will have on-line courses in the following fields: Computer Aided Manufacturing (France-INSA

Lyon), Business on Internet (Greece), Operational Management (Italy), and Optimization strategy for simulation manufacturing (Romania).

**The project was originally planned to be of two years duration (beginning with 1999).** We had proposed this year an extension at three years because we think that is the optimal period to finish in the best's conditions what we are proposed at the beginning and to achieve autonomy for the continuation of our ODL project in ours universities. We hope to give to our students the possibility to finish those courses with a degree recognised from our Education Ministry.

**For this second year we will seek to multiply the effects expected from this project and to bring new partners into our team by demonstrating the feasibility and the interest created by our project.** The new partner involved this year **Liverpool Hope University College** have great experience in the ODL domain, they include the professional training of teachers and many other academic subjects. These include large, successful Professional Studies, Business and Management and Information Management and Communications departments. In this way, by including a contrasting partner we seek to optimize the effectiveness of the project and to maximize the dissemination multipliers created.

We seek to develop a conceptual framework for a really collaborative ODL based on communication enriched by knowledge sharing to reuse previous problem solutions and capture new solutions.

The main target groups are on-campus and distance education students; they include Ph.D. students wishing to complement the traditional engineering courses and to upgrade their professional knowledge's with the main to access to a new, modern qualification in the future active life.

The enterprises are also interested in this form of learning for their personnel with the aim to renew the qualification of their engineers. It thus has a significant knock-on effect in professional training and development.

*In the first year* we are in the process of developing a web page, CD and booklet with the contents of the four courses, the description of ours universities and the level at where each partner is situated in an ODL structure.

*For the second year* we propose to prepare, to change, test and translate in English the classic courses into ODL courses. We also expect to carry out an evaluation of the effectiveness of the materials created and the outcomes of the students this will provide a suitable testing programs, with course revision, and publishing the project results on the Web page.

*For the third year* we propose to implement those courses at the beginning in one university to Ph.D. students, and to monitor and disseminate this findings of this pilot ODL activity. At the end of the third year we try to obtain formal recognition of this Open and Distance form of learning from the relevant national Education Ministries.

*So, after the end of this Socrates ODL project we can continues the activity and to transform it into a continuos ODL activity and not only to close the page of a new experiment.*

## **2. The situation existing in Romania at this moment in ODL domain**

This Socrates ODL partnership project is the first one to be supported from Romania and we are thus discovering the value of technology-based open and distance learning within the lifelong learning process of employees including our ex-students as job seekers.

There were many common problems that appeared in these domains:

- To produce a common product by the end of the first year was difficult, as the technology has not had the same impact in each country? For example, in Romania distance learning materials are more accessible by CD in comparison to had access to the Internet. This is not the case in all partner institutions.
- Are professors prepared to put the courses in an accessible form for networked learning? Are they prepared for the boom of network learning?

- Are the students prepared to learn without being closely monitored by their teachers?
- Had we the power to demonstrate that our methods are the bests in the networked learning at the beginning of the second millennium?

At the beginning of the first year we spent two months posing these questions between the project partners and after e-mails discussion we realized which would be the possible alternatives suitable for each partner.

So, we propose to make a sample of CDs at the beginning and offer to produce more at the request of the interest persons. The CD will store the most important course and project information from our Web page in French and English.

At the same time we will work to develop a booklet with the most important information found on our Web page in French and English and with the presentation of our CD to incite the possible benefits to ask the printing of the CD.

In Romania at this moment the professors haven't an easy access to the Internet just in time. Unfortunately we concluded that we are not the only countries in this situation. So the CD can be consulted by anyone and it will incite to access Web page.

For the most disadvantageous people concerning the possibility to join Internet (ex: different education organization, foundations, career centers etc) the booklets are more suitable and accessible. So we can assure access and the dissemination of ours project information to all the levels.

At the beginning we establish the possibilities and the needs of each partner relating with this project. We saw that due to new technologies, knowledge delivery modules have also changed to include on-line (education access through the Internet) and distance education (interactive learning).

So, many institutions of higher learning have adopted ODL as the next logical step in educational delivery systems like the educational pedagogy of the future:

1. To convert the classic courses into online formats and to translate in English;
2. To support and manage distance education,
3. At the end of this project to continuous this activity.

In communication we utilised asynchronous facilities like e-mail, file transfer and newsgroups and synchronous communication facilities like chat. These facilities will be allow communication between partners, tutors or instructors and students or between students (peer group discussion); but they also allow information sharing and workgroups. At this moment we have a virtual meeting room in an e-mail group address were we share ours project problems.

**Student's tools:** the most common tool student can access are the resources building the "online courses". Virtual Reality presentations or simulations are not very easy to use today. So we will have also a CD with the presentation of ours courses and also we will give the students the possibility to access the material put to a server with limited utilization (that means only for students and of tutors, professors).

**Support tools:** this category regroups tools for the instructors or the tutors. Besides course planning and design, the commonly provided facilities include course customization, course monitoring and managing, which allows the instructors to collect various information from the students (use of the resources), data management (marking, statistical analysis), and sharing facilities among the instructors or tutors community allowing them to build collective knowledge.

At our university in Romania, we have a ODL tool represented by: two stations SUN ULTRA 10, a video camera, a digital camera, and a Computer Integrated Manufacturing – Festo utilized for simulation and manufacturing (figure 2). At this moment by a program financed by Mondial Bank we had the possibility to share soft and courses with two faculties from our university. With INTRANET the students of three faculties can assist in the same time (on-line) to an experiment (video-experiment) made in one of those faculties. We hope to extend this experiment with others universities in our country.

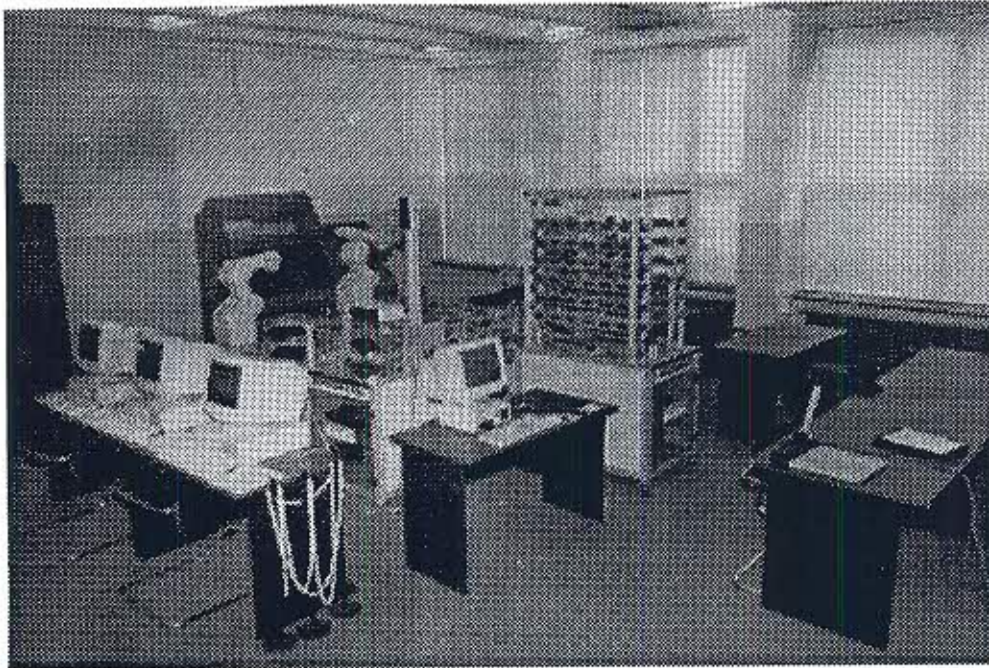


Figure 2. CIM-Festo from University POLITEHNICA of Bucharest

At the end of October we participated in a networked learning forum, “**Web-based learning environment in Europe – pedagogical challenges**”. This was a great experience for us. The virtual discussion platform (160 people from different countries in Europe have registered for the seminar) gave us the answers to many questions about web-based learning. We discussed what we couldn’t do with these systems, what are their functions, how we can use them to teach, but also to train, to study and to learn, according the side of the teaching/learning process we stand on.

We have developed our project web page: <http://leo.optimum.pub.ro/socrates/favir.html> where we have placed the synopsis of the project. At this moment we have prepared a lot of materials, such as the contents of the courses, the description of the partner institutions ready to be put in the web page (bilingual - French, English). We are awaiting the last modification of our partners (made to our e-mail group address, a virtual meeting room) to be able to put this onto the web page. We send all the documents that we intend to put into web page (contents of the courses, descriptions of the universities, description of our activity) we discuss them and after the modification or not we putted them into the web page.

We established the specific needs of each partner, the courses and to a common modality to transmit the contents of the courses into a web-database. We established some core points including:

- Evaluation the potential abilities of each partner
- Integrating of each in a potential model of “excellence”
- Becoming and staying responsible for themselves ( to have the motivation to complete open and distance courses)
- Construction of the goals and objectives
- Selection of a strategy to reach the target audience

We think that we are already working in a ‘real’ virtual team; we share so many common points of view and we share also very many different points of view. But the real problem is how and when to accept the others opinion and to recognize that is the best. We think, that the first few months of activity were very important in terms of strengthening the partnership and the relationship between collaborating institutions and to discover the human and technical potential of each partner.

**Monitoring and evaluation:**

For the monitoring and evaluation of this project for the first year we have used an expert who has consulted with us about this domain. We also produced a report after some test questionnaires from students with the aim to see the impact of those courses in that form of presentation (for ODL).

**Dissemination of the project:**

We will disseminate our project at the meetings with the university staff from Romania, with our partners from other countries, etc.

Also we have been accepted with a paper where we disseminate our ODL project at the international workshop **HRTC 2000 – Human resources Training Center entitled: “ODL Implementation – Romanian Universities problems”**

We will participate at the professional training program **CEFES 2000 (Workshops and online Seminars for university staff members)**, like academics involved in Distance Education and Open learning systems. We will participate also with 5 Ph.D. students.

We have connected an ERASMUS Socrates project with FAVIR. This will provide the possibility to our staff and our students to work together at the partner University. For example we have agreed 3 staff mobilities and two for the Ph.D. students in France.

### 3. Conclusions

The benefits of networked computers are accepted as the new educational technology starting point. The FAVIR Project thus emphasizes the opportunities offered by the network-oriented society for diverse interaction. As a result virtual learning communities may emerge. Teamwork skills are a prerequisite for success in these situations. Cooperation and collaboration are possible as functional working modes within the team. In cooperative groups, it is deemed equally important to give and to receive help. Learners understand that they can only reach their goal if the group, the community, reaches its goal (Johnson & Johnson 1996). So, the ability to learn to communicate in different communities and to learn to use new tools is essential for operating in modern society. Thus it is presumed that learners should be taught teamwork and interactive skills. Dialogue is a tool of this learning where action and learning are linked with the concept of shared expertise.

So constructivist models encourage learners to develop the strategies and expectations that underpin their ability to successfully work collaboratively (Benzie, 1997). So there is a need to consider the role of technology in the learning process, and how communication is affected by modern information and communication technologies.

Specifying precisely the relationship between shaping and effects is currently a goal of research' (Edge, 1995). The FAVIR project will thus seek to evaluate the relationship between technology and outcomes, whether technological is deterministic of improved learning outcomes. The concept that technology also gives rise to social change, and that society shapes technology is also at the core of the FAVIR Project discussing whether the fact that using technology significantly changes teaching processes. The outcomes can then be used to develop facilities that will support learning techniques and attitudes with an eye to the future.

The notion of dialogue as the basis of communication and interaction. Dialogue is a crucial element in the creation of any learning system and especially in establishing a collaborative networked learning environment.

So, the key principles of co-operative learning are positive mutual dependence between learners, interactive communication, individual responsibility, an emphasis on social skills, evaluation of one's own learning, and target-oriented working (Vähäpassi 1998).

### 4. Bibliography

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