

In - Service Training through ODL Environments: From User Needs To Functional Specifications¹

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Extended Abstract

Open and Distance Learning (ODL) can be regarded as learning by means of Telematics (i.e. the combination of means of telecommunications, information technology and multimedia), by which way, among other things:

- all interactions between, for instance, learners, teachers and courseware, necessary for the learning process, can be realised,
- all information and knowledge (in different representations), required for the learning process, is accessible and readable, and
- a high degree of flexibility regarding place, time and pace of learning, can be realised.

ODL does not necessarily mean that somebody must study alone (at home, at school or in the working environment) under the guidance of a teacher who is present somewhere at a remote site. ODL can be best combined with other forms of education, such as cooperative learning or distance learning. The use of Telematics is not a target itself, but one of the means to realise certain educational goals. Following are some of these educational goals:

- Renovation of the pedagogical methods and environments in educational institutions.
- Stimulation, for the dissemination of information among educational institutions all over the world.
- Encouragement of collaboration, which of itself is a very good educational technique.
- Motivation of students through the use of effective and up-to-date technological equipment for the conduction of learning.
- Effective transnission and delivery of knowledge to students.

The educational systems must be urgently supported via a well targeted introduction of the use of Information and Communication Technology (ICT), by installing flexible teachers' training techniques that ensure:

- equal opportunities for all, without restrictions such as distance and time,
- cost effectiveness,
- continuous improvement of teachers' skills and capabilities.

At the time of this writing, in Europe, an attempt is being made to encompass the aforementioned goals for the educational systems through ODL Environments. This attempt is performed under the TRENDS Project (Telematics Applications Programme - ET/1024 EC).

The TRENDS Project aims at the development and efficient delivery of in-service training to school teachers, thus improving the quality of the educational services of public interest and, at the same time stimulating the creation of new jobs in the education and training sector. The methodology focuses on the enhancement of existing ODL techniques, in the area of multimedia telematics, by practising the latest methods of Information Services Engineering, in measuring the application as well as the socio-political feasibility in the domain of life-long learning. The objectives of the project are:

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- The development of an in-service, school based teachers training system, based on multimedia telematics, to support the continuous improvement of teachers' skills and capabilities in Secondary Education, in Europe.
- The implementation of distance learning techniques, to provide viable and cost-effective school based training.
- The establishment and operation of a European Teachers' Training Network, to provide the distance training.
- The validation of the distance training services, by training 2,400 teachers from 120 European public secondary schools.

A very important phase in the lifecycle of a project relates to the determination of User Requirements. Taking into account that TRENDS is a trans-European project, the task of establishing User Needs is even more complex and requires a great deal of organisation and planning. Failure to identify the User Needs is almost certain to lead to the failure of the entire project. It is therefore imperative that the utmost care is taken to determine the full User Needs at the outset of the project.

The method stated below for the determination of User Needs was adopted in the context of the TRENDS Project by the participating countries, with slight variations as dictated by the differences observed in the structure of their educational systems.

1. Interviews of a number of key persons and experts (indirect users of the TRENDS project), from the fields of Education, Information Technology, ODL, with an agenda of topics related to the teacher's work, his/her initial training, his/her in-service training, the new role of teacher implied by the introduction of new technologies in the learning process, his/her needs for support etc. Conclusions were used to master guidelines on which the questionnaires were based.
2. Organisation of discussion panels/workshops, with a marginal extension of the numbers of these key persons and experts, for brainstorming and discussion of the aforementioned topics.
3. Questionnaires addressed to potential end users (school teachers), who were divided in two groups: users with experience, in the use of ICT for educational purposes and users without experience in the use of ICT for educational purposes.

It is necessary to lay stress in the fact that the justification of the outcomes for each of the participating countries was ensured by:

- the involvement (discussion and/or questionnaires) of end users (teachers), to some extent.
- the involvement of indirect users (education policy makers, ODL and ICT experts, teachers training experts, decision makers etc.), by interviews and discussion panels/workshops.

The User Needs as expressed by the end users can be classified in two areas: The first area contains needs expressed by those that have little or no experience in the use of modern telematic technologies for the improvement of the educational process. The second area contains more detailed needs, expressed by those that understand the possibilities offered by the use of telematic technologies. Following are, in brief, unified the needs that were determined during the WP3 of the TRENDS project:

- Acquaintance with the various tools offered by ICT and how these can be uniformly and readily used in order to improve the overall quality of the learning process.
- Creation of interdisciplinary courses on a national or international basis.
- Personal communications among teachers, school administrators, curriculum experts, in order to exchange ideas, information, plans, techniques, concerning the educational process.

- Participation in discussion “fora” dealing with educational issues, so as to exchange information / opinions on educational matters with their trainers and their colleagues all over the world.
- Access to resources containing educational material (e.g. Internet’s WWW).
- Transfer or exchange of educational material between teachers all over the world.
- Access to services offered by already established educational networks, so as to exploit already existing and evaluated resources.

To meet the expressed by the end users of the TRENDS project requirements, the following services will be offered in the context of the TRENDS project:

- Personal contact with other teachers and trainers.
- Access to multimedia information that exists in various sites in the Internet. Access to curriculum related information.
- Fora for the discussion and debate on educational issues.
- Participation in lessons conducted over the network.

The services that will be offered by the TRENDS project will be implemented as a set of software tools that will abide by the client/server model. The use of the client part of the software tools will be through a common look graphical user interface (GUI). The interface will vary according with respect to the different languages of its users. The set of software tools that will be used for the implementation of the above services is:

- E-mail system with support of multiple data formats.
- WWW servers and clients.
- News/Bulletin Board servers and clients.
- A custom developed teletraining tool that will facilitate the participation in lessons conducted over the network.

For the uniform provision of the above services in a pan-European level and the enhancement of cooperation of the participating countries in various educational issues, the TRENDS project will establish and operate the underlying network infrastructure. In each of the participating countries (National Sites) the following configuration will be used:

- The Training Centre, in which the various servers that facilitate the provision of the TRENDS services will be created.
- The schools that are connected to the Training Centre of their country. There, the necessary client software to access the services offered by the TRENDS network, will be installed.

The Training Centres of each of the participating countries, will be interconnected through the already existing technologies of EURO-ISDN. This network will function as an educational network exclusively, that the teletraining tool will use for the conduction of lessons. Through the connection of each Training Centre to the Internet, personal communications between the educators, access to multimedia information and participation to discussion fora, will be accomplished.

References

1. Telematics Applications for Education and Training, Usability Guide, C. Smith and T. Mayes, ICBL, January 1996.
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3. User Requirements Specification, D3.1, Project TRENDS - ET/1024 EC (Vol. I, II).