

ODL for SMEs: developing a training system for the Liguria region

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This paper draws on the experience developed within the FADxPMI project, funded by the Provincial Administration of Genoa (Italy) and run by the Institute for Educational Technology of the Italian Research Council (ITD/CNR). FADxPMI is the Italian acronym for Distance Training for Small and Medium Enterprises: the project tackles the problem of managing the change from face-to-face training to distance training in Liguria, the region in North Western Italy where the city of Genoa is located.

SMEs are a major economic resource of this area, and it is fully acknowledged that:

1. Their chances of surviving and prospering are heavily dependent on their flexibility and ability to cope with the challenges of a very dynamic market;
2. These important qualities can and should be strongly supported by an open and flexible training system, and particularly one that doesn't require very small enterprises to do without staff for significant amounts of time.

Unfortunately, it is also widely acknowledged that the Ligurian training system presently fails to satisfy these requirements, in that most of the training on offer is face-to-face, and the many training institutions in the area do not possess the know-how and infrastructures needed to implement distance training initiatives. However, there have been some interesting and promising experiments in this field, but what the Provincial Administration of Genoa wants to promote with this project is a significant step forward in the direction of setting up a system to support a more systematic implementation of ODL for in-service training of SMEs' staff. Such a system, although designed specifically for the local context, might also be easily transferable to similar contexts, bearing in mind that SMEs are the backbone of the whole Italian economy, not only of our region.

It should also be noted that the problem of shifting the perspective from traditional face-to-face training to distance training cannot be reduced to a mere problem of training the trainers: the lack of know-how is by no means the only problem to be solved. In fact, those trainers that seek to engage in distance training face a number of problems deriving from the fact that everything around them is conceived for traditional training: from the way funds are obtained to the way they are supposed to be invested, from the lack of centres for the production of learning material to the lack of infrastructures for the delivery of the courses; even the mental approach of trainees and their bosses is still tuned to face-to-face training and must change to accommodate a new way of learning.

For these reasons, the FADxPMI project is being developed through the following phases:

1. the analysis of distance training techniques and methods, and the identification of selection criteria that should be borne in mind while designing a solution to a training problem;
2. the dissemination of know-how in the design of distance training events among trainers and course designers belonging to local training institutions;
3. the development of proposals for a distance training system suitable for the local context.

The first phase of the project started in 1996 and was completed in 1997. It entailed the production of a comprehensive report where the pros and cons of the use of print, audio, video, computers and telematics in distance training are discussed, as well as the ways in which such media can be employed. In this report it is assumed that a training problem can be defined in terms of target population, educational objectives and content domain, and context requirements and constraints. On the grounds of this definition, solving the training problem will consist in wisely orchestrating different techniques, media and teaching strategies according to criteria which maximise the cost/benefit ratio, though costs and benefits aren't always quantifiable.

The second phase (completed in 1998) consisted in the design and implementation of a course addressed to trainers and instructional designers belonging to local training institutions. The course lasted five months and made use of the results of phase 1, which were made available to the participants through a pass-worded section of the course website. The course consisted of both traditional, face-to-face sessions, and of distance training activities, based on individual study and group work. Participants were given the opportunity to experience directly both the training techniques and the problems that may be faced in the creation of a virtual community of professionals, who are sometimes in competition among themselves, and often resist innovation in that they feel it undermines their individual experience. The course structure and content are illustrated in fig. 1.

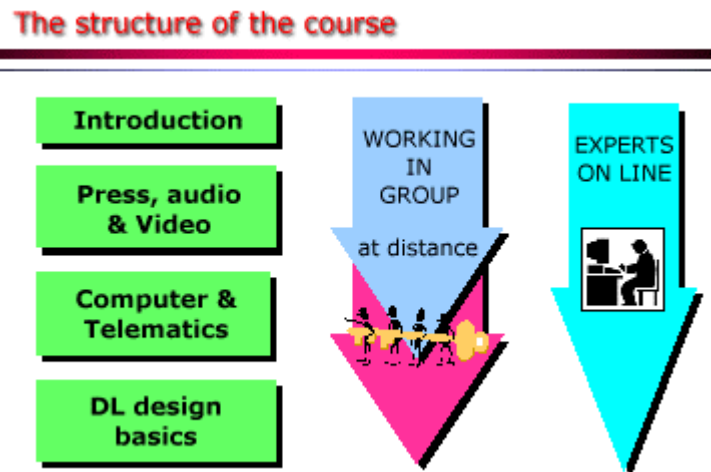


Fig.1 The content and the structure of the Designers of Distance Training course

The third phase started in 1998 and is still under development. It aims to draw up specific proposals for the local context, such as the creation of infrastructures that "factor out" those activities presently duplicated in different training institutions, or that are not carried out by anybody because they are too expensive for any single institution (e.g. production and adaptation of materials, training needs identification and evaluation, etc). These proposals will be the conclusive project deliverable, and of course it is our hope that the Provincial Administration of Genoa will take them into consideration while promoting further initiatives for the development of the local training system.

This paper will focus on the second phase of the project, and in particular on how the large amount of information produced by the first phase was organised and made available through the web to course participants as well as how distance learning was supported through an on-line collaborative learning environment.

The website of the course for Designers of Distance Training

As mentioned above, the second phase of the FADxPMI project entailed the development and pilot test of a course for designers and tutors of vocational courses on Open and Distance Learning (ODL) methodologies and tools. The documentation produced during the first phase of the project was a very important component of the learning material, and had to be made available to course participants. Of course, it could have been printed out and handed down to participants at the beginning of the course, but there were at least three good reasons for choosing the alternative of embedding it into an ad-hoc web-site. The first reason was that the structure of the material is of an hyper-textual nature, in that it contains both internal links from one section to another and external links to web-sites of other institutions. Producing a printed version of this material would have resulted in a loss of this hyper-textual nature. The second reason was that although the learning material was being piloted with a small sample of the target population (22 trainers of the Liguria region), the Provincial Administration of Genoa, who funded the project, intended to spread these competencies among all practitioners in the field. Scale economy therefore suggested that a web-site would have been more costly at the beginning, but cheaper in the long run. The third reason was that creating a website for the course would have given participants the opportunity to try out web navigation as a learning technique during the course.

The amount of information made available through the website called loud for a careful interface design; in order to prevent users from "getting lost in cyberspace" we decided to lay down on the page all the instruments which allowed users to easily surf the web. Among these tools, maps of the various sections of the content domain (fig.2) were made available to users at all times.

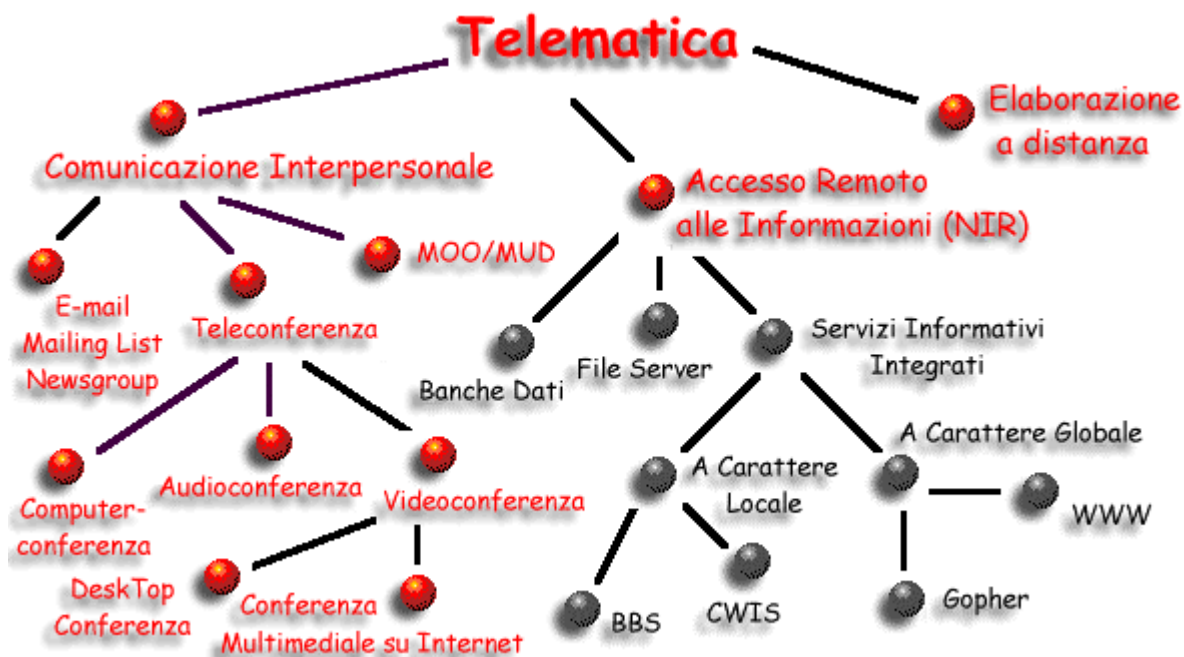


Fig. 1: navigational map - section Telematics

Alongside an introductory section where users could find both general and specific information about the project and the course, the website offers the users the possibility to access all the educational materials through an environment divided into three main frames (fig. 3):

URL: <http://ww2.itd.ge.cnr.it/fadxpmi/>

- on the top of the screen: headings of the course and of the current section;
- on the left pane: table of contents;
- on the right pane: the section body, updated each time the user clicks on the links in the table of contents.

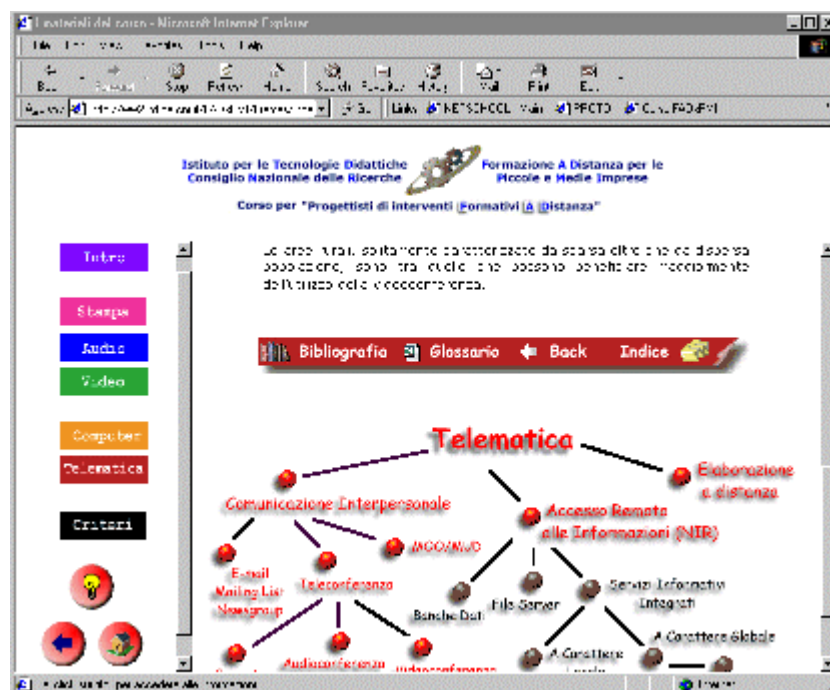


Fig.3: screenshot of the frameset - section Telematics

The educational materials include seven macro-sections: Introduction, Use of Text in ODL, Use of Audio in ODL, Use of Video in ODL, Use of Computers in ODL, Use of Telematics in ODL, Principles of Distance Training Design. Sections were made recognisable by assigning each a distinctive colour and a contextual navigational map showing all the possible paths to follow, according to the unwinding of the lessons in presence.

The site also includes:

- a selected bibliography bibliography for each section;
- a glossary of telematics and computer related terminology;
- an on-line mini-guide section showing participants how to use properly all the resources at their disposal;
- a section devoted to information about the learning community (names, resumés, URLs and roles of all members) and any other organizational issue concerning the course.

Each of these elements is displayed inside a small, resizable "pop-up" window which opens a new browser session, allowing users to keep the parent window of their browsers opened on the desktop of their computers, so that they do not loose the pages they were connected to.

Since the fruition of the website followed step by step the unwinding of the lessons in presence, from week to week participants were also given on-line access to the Microsoft Powerpoint™ slides used during the face-to-face presentations. The formative evaluation of the course showed that this facility was greatly appreciated by participants, both to revise topics and to make up for missed sessions.

URL: http://ww2.itd.ge.cnr.it/FADxPMI/Corso/SlidesIncontri/slides_index.html

Using CMC to support Distance Training

As already mentioned, the course consisted of an alternation between face-to-face sessions, individual study of the learning material and collaborative activities among participants, proposed and tutored by the experts who conducted the face-to-face sessions. To support these interactive activities, a CMC learning environment was implemented and made accessible from the course website. The adopted software infrastructure was Softarc FirstClass™: a general purpose CMC system that is often used in on-line education¹.

The course main discussion forum (called FADxPMI) was structured into six different sub-conferences, as shown in Fig.4. Some of these sub-conferences contained a further subdivision into sub-folders, according to the structure shown in Fig.5. It should be noted that while the top-level structure was decided by the tutors before the beginning of the course, some of the lower level conferences were created at run-time according to training needs and course developments.

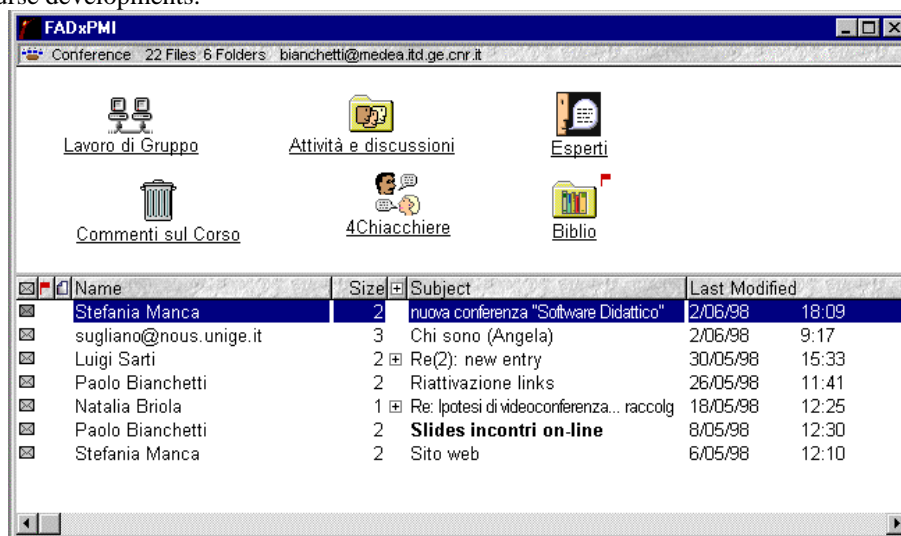


Fig. 4 A screenshot of the desktop of First Class™ in its configuration for the Developers of Distance Training course.

¹ Softarc First Class™ Intranet Client is an easy to use computer conferencing system for Windows and for Mac. With it you can send and receive electronic mail, share files, use electronic conferencing to exchange ideas, and participate in on-line chats. <http://medea.itd.ge.cnr.it/Login/FADxPMI/>

Each conference had its own purpose, as described below:

- Group-work (Lavoro di gruppo): participants were split up into two groups, each of them having to carry out given learning tasks.
- Activities & Discussion (Attività e discussioni): participants had the possibility to discuss and compare their opinions and ideas on the matters introduced during face-to-face lessons.
- Experts (Esperti): participants could rely on on-line experts' helping hand in order to answer their questions and solve their problems, from technical problems to methodological or bureaucratic ones.
- Comments on the course (Commenti sul corso): this conference aimed to collect participants' opinions on the structure and the unwinding of the course.
- Café: (4chiacchiere) here participants had their virtual space where to socialise, meet the other participants and speak of everything but the course.
- Library (Biblio): a library of distance training materials exemplifying the use of various media was put together before the beginning of the course, including material developed by different Italian and Foreign distinguished institutions. Participants were encouraged to borrow materials and review them.

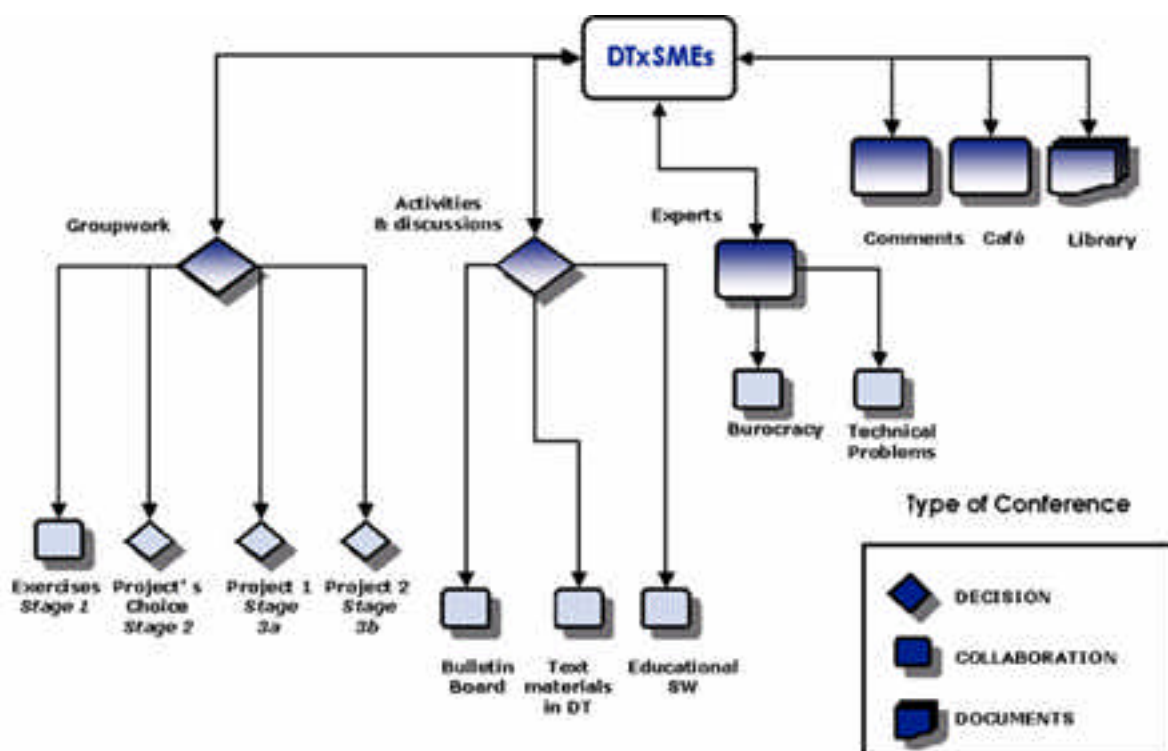


Fig. 5 The structure of the communication forum.

Each conference hosted a number of communication flows and was moderated by one or more remote tutors. At first, tutors specify the aim of each conference, the purpose of the involved activities and their time scheduling. As mentioned above, participants carried out their given tasks and activities under the supervision of the tutors; the results of these activities, usually having the shape of a digital document (doc, rtf, ppt or HTML) was made available to the community through the suitable conference for final discussion and evaluation. In order to meet the goals of the course, participants had to exchange information, share knowledge, design and develop study products (i.e. a web page or a slide presentation) in a collaborative way, take decisions and negotiate critical issues, always at a distance.

Conclusions

The particular "mixed" nature of this course, which alternated weekly lessons in presence with distance individual and group activities, needed to be supported and implemented with specific tools that allowed and facilitated on one side individual learning and on the other the development and the creation of a virtual community where collaborative learning took place.

The decision to implement a learning environment where a website of learning material is integrated with a CMC environment turned out to be successful. Nearly all the participants showed to enjoy and appreciate this kind of environment. Each participant was asked to fill in three evaluation questionnaires (one at the beginning of the course, one half way through it and one at the end) to carry out the formative evaluation of the course, whose results are described in detail at <http://ww2.itd.ge.cnr.it/FADxPMI/Corso/valutazione.html>. The collaborative aspects and the flexibility of the course were the two most frequently mentioned positive aspects. To conclude, it should be noted that the solution to an educational problem hardly ever lies exclusively in collaborative activities or in individual study of material: real problems call for an integrated approach. As a consequence, adopting an approach where the balance is struck between the use of telecommunication technology for interpersonal communication and its use for information retrieval (as in the Designers of Distance Training course) is very often the most sensible solution.

References

Manca S., Persico D. and Sarti L. (1999) Striking the balance between communication and access to information: recipes for telematics-based education and training, Proceedings Of the Third Open Classroom Conference, EDEN, 25-26 March 1999, Balatonfüred, Hungary