TTnet Study

Developing trainers’ skills using open and distance learning systems

Synthesis report

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1. Introduction

This report is one of a series of studies on ‘Developing trainers’ skills using open and distance learning systems’ commissioned by Cedefop in 2000 and 2001 in the context of TTnet[^1]. The aim is to obtain as much information as possible about current thinking within the Community on how to develop trainers’ skills so that they can cope with their new working environment and new tasks.

The work on which this report is based took place in two stages:

- in 2000 a study was made of six projects concerned with open and distance learning (ODL) running in three EU countries, France, Luxembourg and Portugal – two in each of the countries concerned. This gave rise to three national reports;
- in January to March 2001 the six monographs were summarised and merged into a single overall report, whose main conclusions are set out below.

The two French studies related to the APP – Ateliers de Pédagogie Personnalisée (personalised training workshops) – and the MIRI@D network. They were carried out by ORAVEP – Observatoire des Ressources pour la Formation[^2] under the direction of Frédéric Haeuw and Arnaud Coulon.

The Luxembourg studies dealt with that country’s banking training institute, the Institut de Formation Bancaire du Luxembourg (IFBL) and the MBA course run by its Open University (OUL). They were carried out by Etude et Formation under the direction of Marc Ant and Raymond Meyers.

The Portuguese studies looked at the Instituto de Formação Bancária (IFB), the banking training institute, and the virtual school run by the Portuguese employers’ association, Associacão Empresarial de Portugal (AEP) for small and medium-sized enterprises. The studies were carried out by Perfil-Delta Consultores under the direction of Luis Faria Vieira and José Garcez Lencastre.

The main purpose of the present report is to use the findings of the six case studies to determine the changes taking place in working activities, and the skilling and training needs to which they give rise, in order to pinpoint a number of variables applying generally to how trainers develop their skills.

This involves identifying elements inherent in the roles and skills of trainers through an analysis of specific cases in order to arrive at a transnationally valid conclusion.

We first need to define the terms used in describing the systems studied, since their understanding may vary in different national contexts.

The term ‘open and distance learning’ (ODL) is used to describe those systems that make whole or partial use of self-directed learning which alternating individual and group sessions and use information and communications technology (ICT). Students may undertake a period of training, offered through the use of teaching methods and means to which they have access at a distance.

[^1]: The TTnet network provides a forum in which those actively involved in vocational training and decision-makers in the EU member states can discuss key aspects of the training of teachers and trainers. More detailed information on TTnet’s missions and activities will be found on its website: [http://www.trainingvillage.gr/etv/Projects_Networks/TTNet/](http://www.trainingvillage.gr/etv/Projects_Networks/TTNet/)

[^2]: In 2000, ORAVEP was renamed ALGORA Open Training and Networks
‘Open’ refers to the flexibility of the systems used, while ‘distance’ relates to the training methods employed.

2. Summary of work done in the three countries

Since a study report is available for each of the countries concerned, we shall confine ourselves here to a brief presentation of the case studies (cf. tables in Annexes 2, 3 and 4).

2.1. The case of France

<table>
<thead>
<tr>
<th>Study directors</th>
<th>ORAVEP (Frédéric Haeuw and Arnaud Coulon)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>Open and distance learning provision of the Ateliers de Pédagogie Personnalisée (APP)</td>
</tr>
<tr>
<td>Method</td>
<td>Observation, survey of trainers, interviews with those responsible for organisation</td>
</tr>
<tr>
<td>Case study</td>
<td>The APPs sponsored by the GRETA school associations of Vendein de Viel and Caudry-Le-Catteau; APPs sponsored by Lille University of Science and Technology (USTL) and the APP of Villeneuve d’Ascq; APPs sponsored by the Dunkirk and Arras network</td>
</tr>
</tbody>
</table>

2.2. Principal results: a three-dimensional skills benchmark

The chief results of the two French monographs was to establish a benchmark for trainers’ skills, taking account of conceptual, technical and human aspects.

These three aspects in turn break down under three headings: macro (local and global environment), meso (training engineering), and micro (educational engineering).
2.3. **The case of Luxembourg**

<table>
<thead>
<tr>
<th>Study directors</th>
<th>ETUDES ET FORMATION (Marc Ant and Raymond Meyers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>Distance learning system of the Luxembourg Banking Training Institute (IFBL)</td>
</tr>
<tr>
<td>Method</td>
<td>Observation, survey of trainers, interviews with those responsible for organisation</td>
</tr>
<tr>
<td>Case study</td>
<td>IFBL</td>
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</tbody>
</table>

**Principal results: enhancement of traditional training occupations**

Activities and skills were found to evolve in one of two ways, i.e. through the use of new technology and due to the creation of new training environments, confirming the hypothesis that new skills are incorporated into traditional training occupations.

The recommendations are intended for decision-makers and those actively involved in training in Luxembourg. They are intended to stimulate further thinking on the subject, leading to action that will benefit the citizens of Luxembourg.
### 2.4. The case of Portugal

| Study directors          | Perfil-Psicologia e Trabalho  
|                         | (Luis Faria Vieira and Anabela Francisco) 
|                         | DeltaConsultores  
|                         | (José Lencastre and Ana Silva) |
| Subject                 | Open and distance learning at the banking training institute (IFB) |
|                         | Distance learning system of the AEP (Portuguese Employers’ Association) |
| Method                  | Observation, survey of trainers, interviews with those responsible for organisation and Portuguese distance learning experts |
|                         | Observation, survey of trainers, interviews with those responsible for organisation and Portuguese distance learning experts |
| Case study              | The IFB’s distance learning and virtual school system |
|                         | AEP’s virtual school for SMEs |

**Principal results: a trend towards greater versatility**

It was stressed that trainers’ skills depend on the type of ODL system within which they operate. In fact, the profile and skills required for trainers will depend on the circumstances in which the systems are used. The conclusion drawn was that trainers’ professional work was becoming richer, comprising a multiplicity of functions and reflecting a trend towards greater versatility.

The Portuguese report contains the following table of skills for trainers involved in ODL.
### Skills to be updated

<table>
<thead>
<tr>
<th>Skills to be updated</th>
<th>Skills to be acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal communication</td>
<td>Technological knowledge and know-how</td>
</tr>
<tr>
<td>Communication/interest-stimulating techniques</td>
<td>New technology</td>
</tr>
<tr>
<td>Organising and working with groups</td>
<td>Working in cooperation, use of groupware</td>
</tr>
<tr>
<td>Time management</td>
<td>Data exchanges</td>
</tr>
<tr>
<td>Ability to innovate</td>
<td>Hypertext reading efficiency</td>
</tr>
<tr>
<td>Managing means of communication and types of interaction</td>
<td>Rapid typing</td>
</tr>
<tr>
<td>Developing computerised training tools</td>
<td>Real-time tutoring</td>
</tr>
<tr>
<td>Assessing ODL</td>
<td>Non-real-time tutoring</td>
</tr>
<tr>
<td>Creating teaching equipment</td>
<td>Searching the Internet for information</td>
</tr>
<tr>
<td></td>
<td>Elementary knowledge of HTML programming</td>
</tr>
<tr>
<td></td>
<td>Transfer of organisation and training tools to</td>
</tr>
<tr>
<td></td>
<td>computerised media</td>
</tr>
<tr>
<td></td>
<td>Computerised testing</td>
</tr>
<tr>
<td></td>
<td>Production of teaching tools</td>
</tr>
<tr>
<td></td>
<td>Computerised monitoring</td>
</tr>
</tbody>
</table>

### 3. Changes in trainers’ activities

The various case studies reveal the considerable changes taking place in trainers’ activity. These may be viewed from three different standpoints:

- how the different registers of activity – teaching, technological, communicating and monitoring – complement one another;
- how activities vary with the system;
- the global nature of the training process.

#### 3.1. The complementary nature of different registers of activity

The teaching approaches in systems using ICT have a certain number of features in common:

- learner-centredness (the learner is seen as the real client);
- self-directed learning (stimulated by use of multimedia and interaction);
- abandonment of the unity of place, time and action in favour of training purposes (desynchronised distance working, personalised teaching);
- process industrialisation and aim for productivity;
- a focus on skills rather than on transmitting knowledge.
Trainers, therefore, are faced with a twofold change:

- in the kind of work for which they must be prepared, which combines management and enhancement of knowledge;
- in the teaching methods and means to be used.

These changes affect every aspect of life – economic, social, professional and private – and at several levels: teaching, technological, communicating and monitoring.

3.2. Differences in activities depending on system used

The pace at which activities are evolving varies with the extent to which ICT is used in training. One has, therefore, to analyse the different ODL systems before attempting to determine how trainers’ activity is changing.

A trainer’s work varies with the degree of openness and technical complexity of the training system, in some cases following a modified traditional pattern and in others becoming more global, more systematic or specialised.

The typology proposed by Bernard Blandin helps to clarify the trainer’s role in ODL.

a) ‘Traditional distance learning systems’ take the form of correspondence courses or television or radio broadcasts. In these cases the accompanying booklets, teaching documentation and corrected work are sent by post.

Here the trainer acts as an expert in the subject concerned and his activity is centred on designing and producing teaching documentation and materials. He is also responsible for monitoring students’ progress during training and giving them with the necessary feedback through the correction and assessment of their course work.

b) ‘Systems based on resource centres’ provide material such as books, cassettes, videos and software enabling students to draw up their personal training programme, as well as the human resources to monitor each person’s progress.

Here the trainer organises the teaching materials and aids available at the resource centre and acts as a guide and counsellor while also providing initial technical assistance with the use of software.

c) ‘Self-directed on-line learning systems’ provide a computerised network of teaching resources to be used for more or less unmonitored, self-directed learning.

Here the trainer directs her efforts more to designing and adapting teaching tools. Monitoring students’ progress is done with considerable flexibility, if at all. However, the trainer remains responsible for providing the technical assistance necessary for students to use the system efficiently.

d) ‘Distance training and virtual campus systems’ reinstate the trainer/student relationship through the use of ICT. One may differentiate between:

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• distance training systems based on real-time communication, such as audio- and video-conferencing, chatrooms etc. and virtual classrooms, where the trainer simulates a face-to-face relationship with students in a remote teaching situation.

• virtual campuses are hybrid systems using both asynchronous means of communication (such as discussion forums) and real-time chat. Facilities accessible online include general course administration, registration and information, a library and a teaching resource centre, on-line courses, and means enabling a student to communicate with his trainer or other students.

Here the trainer’s function is that of designing and adapting teaching materials; but he or she must also be able to conduct a virtual class using either real-time or asynchronous communication, as well as classes based on physical presence. In this type of system the trainer is mainly a facilitator, a provider of content, a monitor, and a source of initial technical assistance when students have problems using the platform. He or she is also responsible for assessing and validating the knowledge and skills acquired and for carrying out an overall evaluation of each course.

Differences in trainers’ activities (taken from the Portuguese report)

<table>
<thead>
<tr>
<th>ODL systems</th>
<th>Teaching media</th>
<th>Mode of communication</th>
<th>Trainer’s role</th>
<th>Positioning of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional ODL systems</td>
<td>Correspondence courses etc. Radio and TV broadcasts</td>
<td>Telephone, fax, email</td>
<td>Designing Monitoring Assessing</td>
<td>IFB (Portugal) IFBL (Luxembourg) OUL (Luxembourg)</td>
</tr>
<tr>
<td>Resource-centre-based systems</td>
<td>Paper Audio cassettes Video cassettes Diskettes/ software Simulation games Personal training programme</td>
<td>Physical attendance of resource centre</td>
<td>Organising Resource personnel Counselling Technical assistance</td>
<td>APP (France) MIRI@D (France) CCI Clermont-Ferrand CCI Valenciennes (computer and maintenance workshops)</td>
</tr>
<tr>
<td>On-line self-directed learning</td>
<td>Computerised network of self-directed training resources Self-directed training Self-assessment tests Self-direction</td>
<td>Computer platform</td>
<td>Designing Monitoring Technical assistance etc.</td>
<td>MIRI@D network (France) CCI Valenciennes (Language network)</td>
</tr>
<tr>
<td>Distance learning and virtual campus systems (real-time) (non-real-time)</td>
<td>Computerised network of teaching resources usable for self-directed learning Internet Audioconferencing Videoconferencing Webchat Email Discussion forums Sharing applications</td>
<td>Remote tutoring using real-time and non-real-time communication Physical attendance for group structuring and content regulation</td>
<td>Designing Stimulating Facilitating Technical assistance Assessing</td>
<td>IFB (Portugal) virtual school AEP (Portugal) virtual school MIRI@Dnetwor (France) CCI Saumur - Sylphide</td>
</tr>
</tbody>
</table>
While this typology does put the various systems in context, it comes up against certain limits: the systems concerned are generally hybrid, are themselves evolving, and are hence far from stable. Even so, each will fall under one of the four headings given above. We shall concern ourselves mainly with the last three.

The systems studied owe their hybrid nature to their degree of openness and distance as regards the organisation of training.

Three principal factors are involved here:

a) the institutional factor: the institution’s history, its position in the training field and its legitimacy in new open training practices influence the potential for development on this new market;

b) capitalising on existing knowledge and on skills the trainer has previously acquired allows her to make a smoother transition to new types of systems. Prior experience pooled by professional groups makes for a smoother repositioning in ODL systems;

c) the organisational factor concerns the way in which the demands and constraints of ODL systems are recognised and allowed for by organisations responsible for

- the training of trainers;
- formalising emerging training functions;
- recognition and validation of skills.

Finally, the culture of the organisations concerned and trainers’ values represent another important factor, depending on whether the trainer’s principal motivation is:

- adherence to the distance learning model;
- the importance of individual or group working.

These factors assist or impede progress, depending upon the particular culture of the training body concerned and the trainers’ professional culture.

They call for a systemic approach to the evolution of trainers’ activities and skills within the training system.

3.3. The global nature of the process

ODL systems affect the entire process of training and thus every aspect of a trainer’s activity – receiving students, planning, mastering content, motivating, steering, assessing and providing technical assistance.

These should be examined in a systemic fashion, as they are carried out within an organisation that is itself embedded in an environment.

a) the successful reception of students is essential to their integration into the system. This must be done by a trainer familiar with the entire training process so as to ensure that they are aware how the system operates. It is important at this stage for trainers, tutors and students to get to know one another, but also that the course objectives, training route, method of assessment, planning, monitoring of the learning process and technical access to content are made quite clear;
b) **planning** is vital if students are to be given sufficient support as they progress along their training route, whether conventional or virtual.

In the case of correspondence courses, the trainer-as-designer must plan which teaching media to use according to the criteria of relevance, convergence, consistency, clarity and effectiveness. Given the diversity of training situations in a virtual classroom environment, a trainer has to plan all the training sessions – on-line and attendance, real-time and asynchronous, etc – very precisely, as well as the exercises, texts and documentation needed.

Here the trainer has to be able to anticipate, to put himself in the student’s place and rethink her role and teaching approach according to the system being used, while keeping her own knowledge in the subject up to date.

Planning is not confined to organisation and teaching; it is also necessary for the technology used. To ensure that students progress along their training route calls for technical preparation on the part of the trainer, so that he can adapt his teaching material (exercises, documentation, case simulation, multimedia, cooperative working) in line with the platform’s capacity.

The trainer also needs to be ready to step in with solutions to occasional technical difficulties.

This increasing importance attributed to preliminary preparation is one of the major ways in which activity is changing. Anticipation is essential when preparing sessions conducted at a distance or with physical presence, for technical aspects, and for follow-up.

c) **designing teaching resources**: the cases studied showed that trainers are authors or co-authors of a multitude of teaching media (training manuals, exercises, assessment records, guides, videos and CD-ROMs). They must be able to write clearly, easily and directly. The use of multimedia brings its own requirements, obliging trainers to think again about how they communicate.

In a virtual campus, a trainer adapts and transposes her teaching material (exercises, documentation, case simulations) onto an electronic medium compatible with the platform being used and adaptable to all forms of communication, real-time or asynchronous. The design and production of teaching material is subject to new rules involving new ways of working very systematically and as part of a team.

d) **conveying information and stimulating interest**: conveying information and knowledge at a distance, whether or not in real time, makes it necessary to rethink ways and means of maintaining students’ interest and motivation. A distance trainer not working in real time can seek assistance from other people (e.g. colleagues with a greater specialist knowledge in a given field); but in a real-time situation, such as physical presence, the trainer has to deal with demands on his own.

On-line working should also allow easier interaction and communication between those involved. The trainer has to decide which methods and techniques are appropriate for enabling students to solve problems, exchange experience, collaborate, discuss ideas and underpin their newly acquired knowledge.
e) **monitoring.** Monitoring a student’s learning progress is essential; platforms offer access to a variety of relevant indicators. Tracing students’ activity on line, the number of attempts they makes to complete an exercise, their test results, contributions to discussion forums, and emails provide the trainer with clear and reliable information as to how best to help and advise them. The role of tutoring, in real time or otherwise, thus becomes more important, because of its practical differences with tutoring in a conventional environment.

f) **providing technical assistance** assumes that the trainer himself masters the tools used for distance learning (platform or the like) sufficiently to be able to cope with the questions raised by students in real time. Throughout the training period the trainer should be ready to help solve problems connected with the use of the technology involved, in real time or otherwise.

g) **assessment and control.** The functionalities of new means of communication (webchat, discussion forums, email, shared applications etc.) give the trainer as tutor greater control over each student’s training route, as well as the tools needed for assessment.

The changes in activity referred to above have a four-fold impact:

- they call for greater versatility on the part of trainers;
- they enhance trainers’ activity;
- they result in a re-allocation of activities within multidisciplinary teams. (How work is reorganised will depend upon the history of the institution concerned, the expertise already existing, and trainers’ prior skills and knowledge);
- they result in a double shift in activity: to preparation prior to training and to monitoring during training.

**SUMMARY**

- Increased activity ahead of training: preparation, planning, anticipation;
- Repositioning of writing and interest-stimulating activity;
- Intensified monitoring of students throughout the training cycle;
- Specific follow-up and assessment;
- Providing initial technical assistance;
- Group working, team dynamics.
4. Skills and training needs

Whatever the strategies employed by organisations for incorporating ICT, the advantages or obstacles encountered as regards expertise, skills, resources, and changes in trainers’ activities lead to a repositioning of skills in technology, teaching and project management.

4.1. Three levels of technological skill

Level 1: Minimum knowledge and abilities needed for using the new means of communication

Computer and communication facilities – email, file transfer, browser, telephone, video telephone, desktop video conferencing, multimedia presentations, networks etc. – have become training tools.

These various technologies have to be identified and classified so as to choose the tools, networks and software best suited to the particular aims of training and activities involved:

- a basic knowledge of computers, operating systems, terminology, keyboard, mouse and other interface elements, detecting and remedying minor malfunctions, input/output devices, modem, interfaces etc.;
- structuring databases: formats and characteristics;
- software and applications: teaching, word-processing, spreadsheets, databases, computer-assisted graphics, computerised and multimedia presentation software;
- Internet: email, use of browsers, searching for and storing information, file transfer, protocols, computer languages.

Level 2: Incorporating and using ICT systems and equipment

This involves learning to use computers, software and internal and external communication networks efficiently for different purposes, such as analysing needs, designing courses, training, tutoring, assessing etc. The electronic tools usable for training purposes possess a great many functionalities:

- general-purpose software used for producing teaching material, such as word processors, spreadsheet, database and graphics software, computerised and multimedia presentation editors and hypertext editors;
- special software required for distance learning such as webpage editors and author systems;
- conventional and distance learning management systems (LMS).
- computerised presentation tools: installation and use of presentation software or file transfer software for text, graphics and multimedia;
- teaching software: installation and use of teaching systems, computerised and multimedia presentation software, and typical training software, webpage editors;
• systems for use in training design: needs analysis, structuring and designing training, development, and text management;

• systems for use in real-time training: real-time or non-real-time training assisted by text, audio or video systems.

**Level 3: Use of Internet**

The purpose of using the Internet here is as a tool for designing or managing training or for teaching/training activity:

- installing browser software and software for specific purposes, such as plug-ins;
- using email, electronic file transfer, uploading and downloading, etc.;
- using browsers for finding and storing information from websites and circulating it;
- using real-time text communication software (IRC – Internet relay chat);
- using Internet discussion forums and message systems (news group and list mail);
- using computer-assisted video conferencing.

### 4.2. Teaching skills for the production of tools and for maintaining student interest

**a) Production of tools**

A trainer selects, designs and uses teaching methods suitable for the specific teaching circumstances in each case – trainee profiles, training means and media available, the particular environmental circumstances, the type of content, teaching objectives, and the organisations or firms for whom the training is being given.

A trainer processes the information (knowledge and know-how) for open access using real-time and non-real-time communication so as to incorporate it in the various stages of the training process;

A trainer has to start by devising applications of high quality and effectiveness. Then she has to be the leader, manager and link person, and know how to define and manage priorities and students’ use of tools. Thirdly, she has to evaluate the open and distance learning products and make the necessary improvements.

This involves:

- drawing up specifications for open and distance learning courses;
- assessing training packages and selecting a ready-prepared or individualised training package;
- establishing on-line training strategies for real-time or non-real-time use, and creating a motivating and productive environment.

**b) Interest-stimulating skills**

In real-time the trainer:

- stimulates and leads chat line or net meeting discussions;
• uses electronic tools to present the content of training (objectives, activities, simulation, exercises);
• answers students’ questions on-line;
• ensures feedback;
• assesses students’ participation and involvement.

In asynchronous time the trainer:
• performs administrative and teaching work needed for the smooth operation of distance learning – preparing and making known detailed planning and programmes and objectives, organising and transferring teaching material, checking students’ presence and absences, answering students’ questions;
• manages and motivates students using communication strategies compatible with the technological infrastructure;
• encourages and steers discussions in forums or mailing lists;

c) Project management skills

Owing to internal and external cooperation and growing project complexity, trainers’ activities now extend to project management.

The trainer is responsible for preparing an open and distance learning investment project. This includes defining objectives, estimating the human and material resources required and the necessary funding. He must be aware of the advantages and disadvantages of the solutions proposed and be able to assess the potential risks and rewards of the training project.

CONCLUSION

At present trainers are faced with two sets of constraints. The first is the need to train themselves in the new training technology while they are training others, in response to changing needs and in a context of constant change.

An ODL project today is still a project for change as much as a training project.

5. Skills change variables for ODL trainers

An analysis of the activities and abilities required by distance-learning trainers reveals four transverse change variables:
1. the institutional variable;
2. the technological variable;
3. the ‘skills capital’ of professionals as a group;
4. the innovative project management variable.
5.1. The institutional variable

The strategies of training bodies with regard to ODL derive from a number of factors:

- external political, economic and social pressures;
- the existence of institutional networks and their quality;
- the motivation of management teams and their ability to allow for the internal and external factors influencing creation of the systems;
- the expertise of training teams and their support for the project.

These factors are decisive for subsequent choices, such as:

- full, partial or progressive use of multimedia;
- partnerships and sponsorship of networks;
- mobilisation of resources;
- managing global change in the organisation resulting from new industrial practices.

The interplay of these factors, and especially the resulting compromises, will lead to the new technologies being accorded very different placings within these systems:

- in one case the new technology will be central to the system and act as a driver for radical change in practice, organisation, team abilities and vision of training;
- in another case it will remain of marginal importance as a source of additional tools, leading to more gradual development and more variable geometrical changes than in the first scenario.

Depending on the scenario opted for, the reorganisation undertaken, funds allocated and handling of different registers (development of the training system, work organisation, organisation of teaching and technological resources, quality etc.) will differ considerably.

The position of the steering teams and the way in which the change involved is presented and managed will then become a key variable.

5.2. The technological variable

Two technological and organisational choices involved in the creation of ODL systems will be of prime importance, namely:

- the allocation of financial and human resources;
- the choice of media according to the vision guiding the ODL project, depending on whether the operation is viewed as gradual or from the outset as a continuing long-term project requiring means, resources, and a specific organisation.

5.3. The ‘skills capital’ of professionals as a group

The development of ODL must take account of all the activities, skills and roles of those involved.
Where they have had previous experience of change, trainers will be more open to changes in practice.

Their experience will have equipped them with basic knowledge favourable to ODL in two important ways: the need for team work and the need for versatility.

The ODL systems will indeed involve a collective effort and presuppose the trainer’s involvement as interest-stimulator, organiser, coordinator and tutor.

This development represents an overturning of traditional practice, which necessarily focused more on the individual and related to a particular type of occupation. Consequently, the entire group’s prior experience will help reposition skills within the professional group as a whole.

### 5.4. The innovative project management variable

Taken in conjunction with the first three, this fourth variable is a key point of change. The strategic choices and how they are presented, the human and financial resources allocated to the project, the qualifications of those responsible for the project (project director) will decisively influence the launch, realisation and deployment of projects.

The evolution of teaching practice here comes under the heading of a new architecture for training projects. An ODL system in fact calls for a re-engineering of training that is rendered more complex by the number of people involved both internally and externally, the technological dimensions of the project, and the sharing and re-allocation of skills among the personnel involved.

The trainer has to establish himself within this group, position his activities and coordinate with others in a process in which the goalposts are constantly changing. Joint management of the re-engineering of both teaching and training is important for the consistency of the project as a whole.

These new systems also represent important innovations compared with existing practice. The French study concerned itself with this dimension of the cases studied, as if we identify properly the different levels at which the project is carried out (institutional change and change in training) an innovative project can be run with firm control of the management variable.

Only a combined analysis of these different variables will make it possible clearly to predict the way in which the skills of trainers and training organisations will evolve in the face of ODL.

### 6. New skills, new types of occupation

Are we witnessing the emergence of new types of occupation or only a change in trainers’ skills as they adapt to the new contexts in their teaching activity?

Three major trends are observable so far as the enrichment and development of trainers’ work and responsibilities is concerned:

a) the trend to adapt conventional teaching skills at three levels – in relation to knowledge, to students, and to the media;

b) the trend to develop technical skills required for using new media and training platforms;
c) the trend to strengthen the dimension of teamwork. Teamwork is needed in steering complex systems, joint production, coordinating individual actions and because of the increasing importance attributed to training re-engineering.

Moreover, ODL systems go hand in hand with the emergence of a number of new functions linked to their technical nature: network managers, webmasters, platform technicians and managers, graphics technicians, development operatives etc.

For the moment these functions are still shared among members of the working teams. The institutional context, the constraints it imposes and the resources available influence the allocation of tasks. Some organisations plan and budget precisely for the activities involved in each function, whereas others expect the trainers to take responsibility for everything.

The roles of those involved in training are today evolving and becoming more diversified. The trainer is being repositioned as guide, facilitator, counsellor, tutor, technician, mentor, etc.

The process is one of redistributing activities that are being redefined between the three poles of teaching, technology and engineering.

7. Recommendations

These three aspects of evolution – enhanced responsibilities, new functions, new combinations of tasks for those actively involved – are still not sufficient to furnish indicators of lasting change for ODL trainers.

The procedure required in order to deal with the subject in greater depth would seem to be:

a) Analysing current projects:
   - to identify more clearly the factors lending impetus to, or impeding, ODL projects, especially at project management level;
   - to define ways of combining change variables so that individuals and organisations can identify their own issues and solutions.

b) Capitalising on experience
   - to identify the scenarios for putting the new ODL-related practices into effect and capitalising on the experience data by scenario;
   - to propose ways and means of conducting exchanges and benchmarking in different forms.

c) Training the trainers:
   - to incorporate changes, brought about by the use of ODL in training, in the use of new tools and aids;
   - to work more closely with groups and training teams who are together coping with the implications of the new ODL systems, rather than focusing on individual trainers.
Annex 1 - Analysis grid used for all six studies

1 - Description and analysis of the open and distance learning system

1.1 Context and current availability
How the system came into being within the sponsoring organisation (and that of any partners);
who initially piloted the project; training policy; vectors of change

Project implementation:
  - objectives set
  - project structure - implementation
  - obstacles encountered
  - involvement of employees
  - training of employees involved in setting up the system
  - impact of this training on employees and on the system

Current ODL training availability:
  - subjects (training catalogue)
  - training level
  - duration

Groups targeted (number, profile, origin. starting level, sex, age etc.)
  - number of hours/courses/students
  - links between ODL and conventional training

1.2 Training system architecture in terms of logistics, technology, teaching methods, organisation

Access conditions:
  - Prerequisites, equipment needed, positioning etc.

Methods:
  - Methods of distance learning systems (identification of training needs, design and development, training, production of teaching aids and assistance, multidisciplinary teams)

Operation:
  - Accessibility (permanent modes of entry/departure, opening days and hours, times of remote tutor availability)
  - Target groups (number, profile, origin. starting level, sex, age etc.)
  - Training locations (including places with access to ODL terminals)
  - Types of training (distance, presence, individual etc.)
  - Training route (type, customised etc. method of design and production)

5 This is a reference grid, with each partner concentrating more on subjects of national importance.
Average length of training
Content (exercises, remote tutoring, follow-up) and methods of distance working (real-time, non-real-time)
Management and steering of system (persons actively involved, tools, methods etc.)
Technical assistance:
Technology of exchange and system architecture
Means of communication
Software used for course development, monitoring, follow-up
Other
Material available: type, number etc.
Description of resources used (quantity and quality, % resources bought in and self-generated)
Design and production methods (persons involved etc.)
Methods of validating training
Certificate of training, diploma, certificate of skills etc.
The ODL team:
Trainers, computer technicians, teaching managers, secretaries, librarians and archivists, tutors, etc.
Time allocated to the system
Possibilities for exchange of experience within the team
Training of employees involved in setting up the system
Outlook
Consistency of the system in terms of users (customers, users, producers) and the objectives of each group
Projected life of the system, developments foreseen for the short, medium and longer term
Globalisation of training available

1.3 Assessment of the system
Description of the assessment system (criteria, methodology, those actively involved)
Results

2 - Impact on trainers

2.1 Status quo
Number and quality of operatives (number, sex, permanent, temporary, age, length of service etc.)
Recruitment
Type of employment contracts for trainers
Trainers’ social and professional trajectory
Structure of training body
Professional links and remuneration

2.2 Impact on training engineering
2.3 **Impact on teaching engineering**
- functions
- personnel responsible, autonomy
- hierarchy
- relationship between those involved (trainers, students etc.); typical communication methods and tools
- monitoring system

2.4 **Enrichment or impoverishment of work content**
- new Taylorisation?
- versatility
- upgrading of jobs
- management of complexity
- modification of space/time benchmarks

2.5 **Impact on human resource management**
- career development
  - compatibility with remuneration
  - training of trainers (link with new ICT and exclusion)
- lasting nature of skills developed

2.6 **Point of view of trainers**
- fears and hopes
- risks and rewards
- main problems mentioned and solutions provided
Annex 2 - The case of France: Presentation of ODL systems

<table>
<thead>
<tr>
<th>Case studies</th>
<th>MIRI@D network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personalised training workshops (APP)</td>
<td>The creation of the personalised training workshops was the result of a desire of socially concerned persons to respond to young people’s anxiety by offering them a locally based facility designed to meet their needs. These workshops, which were created in 1895 by close collaboration between central government and the local authorities, offer young people and adults of all educational levels short training courses (300 hours maximum) in general subjects with a view to their subsequent employment. Since the training workshops are necessarily based on partnerships and sponsored by a variety of training bodies they are essentially a local facility. Their small size and the fact that they are locally based mean that there are now 760 such training facilities spread throughout France. In 1997 some 139 000 people were undergoing training. This represented 11 700 000 training hours, mainly targeted at job-seekers (61%) and women (70%).</td>
</tr>
<tr>
<td>The context</td>
<td>The Chambers of Commerce and Industry (CCI) set up under the law of 9 April 1898 are public-sector bodies that represent the commercial and industrial interests of the businesses in their region. There are currently 161 CCIs in existence, grouped regionally in 21 regional organisations (CRCIs). The CCIs run various activities, of which training is one. Indeed, the CCI network is the largest training body in France after the state education system. The CCI organisation seems very concerned to introduce new educational technology into its network. It has adopted a variety of approaches. One has been the creation in 1996 of the MIRI@D association, an initiative of the Loire regional organisation. MIRI@D is a voluntary association of CCIs that have chosen to network their know-how and facilities in a bid to improve their assistance to firms with technical training systems for use in training employees of very small, small and medium-sized enterprises. The first specific activity undertaken by MIRI@D was based on conventional personalised training but taking account of new educational technology. The CCIs’ investment in ODL is conceived as a long-term project.</td>
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<td>Case studies</td>
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<tr>
<td>Personalised training workshops (APP)</td>
<td>MIRI@D network</td>
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</table>

**ODL systems available (what is on offer)**

The APP workshops are open training systems which offer courses of some 300 hours in general subjects using assisted self-directed learning based on a contract stipulating the pace, duration and content of training in line with individual circumstances. The workshops operate according to certain principles that enhance their value in terms of educational innovation. They are:

- Their inter-institutional nature and the need for partnership.
- The personalised nature of training.
- Their use of various forms of self-directed learning, focus on the needs of the individual etc.

Two types of training are currently available through the MIRI@D network:

- The Reflex system designed for very small to medium-size enterprises which uses the Sylphide distance learning platform and is concerned essentially with updating basic knowledge and skills. This involves about 120 hours of on-line training for some 30 hours of tutoring.
- The NetLangues system offers 130 hours of language training, concentrating on the four basic aspects of written and oral expression, and written and oral comprehension.
## Case studies

### Personalised training workshops (APP)

The APP workshops use personalised teaching situated between self-directed learning and open and distance learning (ODL). The system used is based on:
- tutorial assistance, making it possible to decide with each client the goals to be aimed for, to draw up a plan of work and to make sure the client receives the help needed to make progress in learning;
- assistance with the method of organising personal work, structuring knowledge, evaluating what has been learned and knowing how to take advantage of existing resources.

The trainer is expected to assess the needs of clients and propose a plan of work appropriate to each. In so doing he has to take account of their individuality, anticipate the many cross-currents in the learning situation and choose from among the various degrees of monitoring those best suited to the needs of each client.

There is no relationship of superiority between trainer and trainee. Trainees help to draw up the training contracts and must carry out the work agreed, consulting the sources recommended in order to attain their objectives.

The APP network can be classified as a system based on resource centres. This is undoubtedly open, in the sense that they propose training methods and contents that respond to individual requirements.

### MIRI@D network

The REFLEX system, which uses the Sylphide distance learning platform, was produced in cooperation with firms on the basis of a situation diagnosis, assessment of skills shortfalls, and constraints on the firm. The aim is to advance towards tailor-made training that is flexible, personalised and could be used at a distance or not, as desired, with tutoring guaranteed either at a distance or through personal presence.

REFLEX training is aimed at updating key job skills such as communicating, using numerical data, team-working, problem-solving, improving learning skills and performance and working with computers.

In order to become an accredited REFLEX centre a CCI has to meet a certain number of requirements, chief of which is that it should have a project manager, a technical correspondent, and tutors familiar with the subject-matter being offered, skilled in personalised training and familiar with the technical office environment (Lotus, communications technology) and a readiness to adopt new educational techniques.

NetLangues is an Internet-based, tutored language learning system in a virtual classroom environment, usable by anyone, anywhere so long as they have a computer and Internet connection.

Training is built around on-line contents produced by IHNL. The training involves around 130 hours per level. There are five levels, each of which is composed of 10 units which in turn involve 15 different activities.
<table>
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<tr>
<th>Case studies</th>
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<tbody>
<tr>
<td>Personalised training workshops (APP)</td>
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</table>

### Training engineering

Most APP workshops have not yet adopted a distance learning system. Normally the distance between the student and the trainer is more temporal than spatial with both working in the same place at different times. However, several unpublished and innovative experiments show that changes are underway.

A CCI wishing to become recognised as a NetLangues centre has to fulfil a number of requirements. Chief among these is to employ a nominated product manager, a technical correspondent and at least five tutors holding a first degree in languages and a mastery of the language similar to that of a native speaker, and who are open to new educational technology.

The MIRI@D network has developed teaching materials and ODL management tools according to the various stages for project managers and other trainers, most of them in conjunction with publishers and computer service providers.

### Human resources

Generally speaking, the APP workshops are based on small, relatively stable teams of trainers. For many of them this is their first significant training experience. Very few have worked in initial training.

Many trainers cover a wide range both from the teaching as well as the organisational point of view (they have contacts upstream and downstream of training with partners and sources of funds...running initial meetings, arranging telephone conferences etc.)

The CCI network would seem to be tending towards outsourcing, with substantial use of temporary trainers to supplement a hard core of permanent staff.

The method of operating is becoming more flexible. Trainers frequently stress the need for versatility. The variety of functions involved in training calls for new skills in teaching engineering which are specific to this training approach.

From the outset MIRI@D has stressed the need for investment in order to develop a fund of internal skills within the training centres.
<table>
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<tr>
<th>Case studies</th>
<th><strong>Personalised training workshops (APP)</strong></th>
<th><strong>MIRI@D network</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>The challenge for trainers</strong></td>
<td>Instead of being asked simply to pass on their knowledge, trainers are now expected to undertake a variety of tasks. These include negotiating with the student and monitoring his progress step by step, helping him to measure his progress and anticipate the next stage. They have to organise and manage personal training processes and different teaching materials, making sure they are available and legible and usable by all the various tools, methods and procedures in line with their objective and learning profile. Many trainers still seem reluctant to work with media brought by students. Most do not have an email address or even Internet access. There is a degree of autonomy in their work that enables them to take initiatives and organise their work as they think best as long as they keep within the general regulatory framework.</td>
<td>‘Working in a network, sharing and rapidly expanding territories are new challenges faced by the CCI.s and their trainers’. They need to be familiar with the subject-matter on offer, skilled in personalised training and in using the technical office environment (Lotus, communications technology), while displaying a readiness to adopt new educational techniques.</td>
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</table>
### Annex 3 - The case of Luxembourg: Presentation of ODL systems

<table>
<thead>
<tr>
<th>Case studies</th>
<th>IFBL  (Luxembourg banking training institute)</th>
<th>OUL (Open University Luxembourg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The context</td>
<td>The Luxembourg banking training institute (IFBL) was established in 1990 by the Luxembourg Bankers Association (ABBL) in order to stress the importance of training in the Luxembourg banking sector. It is now one of the main training bodies in the Grand Duchy with 4000 student registrations a year. Training is largely given on conventional lines. Some internal training is open, or partly so, and tailored to students’ needs outside of working hours.</td>
<td>Open University Luxembourg was created in the early 1990s April to meet the growing demand of students living in Luxembourg. It currently has about 200 registered students pursuing a flexible, part-time university course without having to give up their job or sacrifice their family life.</td>
</tr>
</tbody>
</table>
## Case studies

<table>
<thead>
<tr>
<th>ODL systems available</th>
<th>IFBL (Luxembourg banking training institute)</th>
<th>OUL (Open University Luxembourg)</th>
</tr>
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<tbody>
<tr>
<td>While training available is still in its infancy and under development there is a noticeable tendency to replace conventional courses with distance learning.</td>
<td>The ODL project is being pursued stage-by-stage as follows:</td>
<td>The training offered by OUL is in line with that of a traditional university with the same curricula and same degrees awarded as in the United Kingdom. The courses are available only through ODL and cover most subjects taught at university. The offer includes undergraduate and postgraduate (third-cycle) courses in arts, humanities, classics, modern languages, social science, public health, natural sciences, mathematics, computer science, engineering, economics, education science, law, environmental studies etc.</td>
</tr>
<tr>
<td>1) Identification of training needs;</td>
<td>1) Identification of training needs;</td>
<td>There are currently 200 registered students. The majority are following courses in social science and about 50 an MBA course. There are a few computer science students as well. About 150 students are undergraduates and 50 postgraduates, mainly MBA students.</td>
</tr>
<tr>
<td>2) Preparation of handbooks and multimedia material designed for self-directed learning;</td>
<td>2) Preparation of handbooks and multimedia material designed for self-directed learning;</td>
<td>Normally a course is expected to take seven years and the course content is consequently regularly updated, especially in areas such as computer science, natural sciences and business studies, where rapid advances are being made.</td>
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<td>3) Making the material available to students for use at home or at their place of work, flexibly as their timetables permit;</td>
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<tr>
<td>4) Course participation is subject to passing an initial assessment test; final assessments are also held. Testing thus complements the self-directed learning element on both ends.</td>
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<tr>
<td>5) Courses may also be reduced in terms of time – for example 15 days of conventional training can be reduced to 10 – and be more specifically targeted in teaching terms (the level of training courses is rising, there is more time to treat subjects more thoroughly, particularly by role playing and simulation, discussions and exercises).</td>
<td>5) Courses may also be reduced in terms of time – for example 15 days of conventional training can be reduced to 10 – and be more specifically targeted in teaching terms (the level of training courses is rising, there is more time to treat subjects more thoroughly, particularly by role playing and simulation, discussions and exercises).</td>
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<td>Distance learning material is mainly packaged for self-directed learning and includes handbooks, slides, diskettes, CD-ROMs and simulation games.</td>
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<tr>
<td>ODL systems available</td>
<td>Access is reserved to the employees of Luxembourg banks. The requirements where training is wholly or partly in the form of ODL are the availability of a computer with a diskette and CD-ROM drive and/or an Internet connection</td>
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<tr>
<td>IFBL (Luxembourg banking training institute)</td>
<td>OUL (Open University Luxembourg)</td>
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<tr>
<td>Training engineering</td>
<td>Training needs are identified by the academic staff of Walton Hall through specialist committees. These are then reworked by course teams made up of university professors working in concert with the staff tutors who direct the work of other tutors, the tutor’s monitors and the tutors themselves. They are structured as university curricula and in a form (video or audio cassettes, books, diskettes, CD-ROMs, web pages, laboratory kits, study calendars etc.) that can be sent by post or via the Internet, in collaboration with computer specialists, video film teams, graphics experts, laboratory teams etc. Teaching expertise is provided mainly by the tutors, who play an important role in the monitoring and tutoring of distance learning students. They also form the human complement to ODL methods, which essentially focus on self-directed learning. The tutors follow the work done by students regularly and closely, using email, telephone or fax. Tutor mediated assessments are very detailed and carried out on the basis of regular assignments with students taking part through first class conferencing systems and sometimes through chat conferences of the Open University Students’ Association. The tutors also organise personal tutorials attended by students in the region who are doing the same course. These provide useful psychological and human support.</td>
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</table>

The IFBL is staffed by a director and an administrative staff of about 12 (secretaries, administrators, persons responsible for communication and organisation etc.) All the trainers are outside freelances. There is no specific ODL team. The IFBL staff are responsible for the outside trainers, who are banks’ personnel managers, experts in given subjects, or graphics and multimedia specialists. The latter are generally drawn from firms operating in Luxembourg. |
<table>
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<tr>
<td>Human resources</td>
<td>The IFBL trainers are not salaried employees of the institute. They fall into two categories: 1) Trainers with sound professional experience and expertise in a particular subject. They work occasionally on a consultant basis and are seconded by their banks for this purpose. The IFBL has about 180 such trainers. 2) Professional trainers who come from abroad and offer expertise in a specific field. They number about 80.</td>
<td>The Open University is composed of a full-time coordinator responsible for management, recruitment and public relations, and five part-time tutors who are responsible for students living in Luxembourg. This group is in constant contact with the UK’s Open University and forms part of its international structure so far as administrative organisation, available courses, course organisation, validation, equipment and teaching methods are concerned. Tutors must have a conventional university master’s qualification. Following engagement by the OUL they are given two years’ practical work experience as tutors. Training is given chiefly by the monitors and staff tutors who provide regular feedback on their performance. The tutors are also provided with a series of brochures published by the OUL containing advice and assistance for their daily teaching work. At the end of these two years the tutors embark on a theoretical course lasting a year, which is not compulsory but leads to a final examination which gives them the final tutor’s qualification. Like other OUL courses, this course is run as a flexible, open and distance learning course. Once a year a general meeting of European tutors is organised over a weekend to permit an exchange of information and discussions between staff tutors, monitors and tutors and as an opportunity for some general training for tutors. The latter are encouraged from the start of their engagement to continue training by using the Open University’s resources, available to them at a considerably reduced price, or through a conventional university.</td>
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</table>
Case studies

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>The challenge for trainers</td>
<td>The wide range of technology used requires teachers to adopt a new approach to teaching, since all their subject-matter needs to be transposed and formatted on media produced in cooperation with specialist computer, video, graphics and laboratory technicians. A new approach to training is also needed for the trainers.</td>
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</table>

Trainers have to rethink their way of preparing training and spend much longer on preparation. They have to familiarise themselves with the new information technology and use it constructively and with a light touch.
Annex 4 - The case of Portugal: Presentation of ODL systems

<table>
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<tr>
<th>Case studies</th>
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<tbody>
<tr>
<td>Distance learning and virtual school (IFB)</td>
<td>Virtual school for SMEs (AEP)</td>
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</table>

**The context**

The IFB was set up in 1980 in order to provide a continuing training system to improve the educational and cultural level of Portuguese bank employees and provide them with the vocational training (basic, retraining, specialisation etc.) necessary for their work.

The lack of trainers and structures necessary for the smooth operation of a large-scale system called for new training methods.

The **Associação Industrial Portuense** was created in 1845 to encourage cooperation between firms in the north of Portugal. Today the **Associação Empresarial de Portugal**, representing the Portuguese business community, works to encourage and assist cooperation between firms. The distance between firms and the AEP training centre resulted in some resistance to continuing vocational training and led the AEP in 1997 to create a distance learning system which has won over institutions and firms – the Escola Virtual AEP.
### Case studies

<table>
<thead>
<tr>
<th>Distance learning and virtual school (IFB)</th>
<th>Virtual school for SMEs (AEP)</th>
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<tbody>
<tr>
<td>In 1989 the IFB introduced a system of assisted self-directed distance learning which laid down the basic principles of adapting ODL subject-matter and products with the emphasis on a clear, systematic and personalised approach. The basic and regular banking courses begin with an introductory meeting organised by the group tutor who presents the course, the work schedules and organisation. Each student is given a briefcase containing course material. Using self-directed distance learning each student works to attain the goals set by certain dates. The system ensures continuing assessment and feedback starting with diagnostic exercises, to ensure progress in learning. The teaching aids seek to introduce a human element into the learning process and strengthen the relationship between students and the institute, particularly through group exercises and question-and-answer sessions. They are monitored by the tutor using telephone, fax and email.</td>
<td>The virtual school for SMEs organises hybrid courses involving 12 hours of conventional classroom training and 18 hours’ on-line distance learning. Distance learning takes place online, using an Internet platform. During the course there are nine sessions during which students are continually in contact with the trainer. For each on-line session students are grouped together for a conference with the trainer who has set out written questions on the Forum. The students may answer these either individually or within the group. (The Forum is the space where students can look up the answers to exercises set by the trainer and the summary of the most important points for each on-line session). These courses also make use of a number of integrated media such as videos and CD-ROMs. During self-directed learning, students use the handbooks, exercises and texts to be found on the virtual school’s ODL system.</td>
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</table>
## Case studies

<table>
<thead>
<tr>
<th>Training engineering</th>
<th>Distance learning and virtual school (IFB)</th>
<th>Virtual school for SMEs (AEP)</th>
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<tr>
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<td>All the subject matter is prepared having regard to the method being used and the briefcase, handbooks, exercises, audio cassettes, video cassettes and diskettes carrying teaching software are included. All this material is designed in modular form so that it can be used in various combinations for training. The virtual school project was launched in 1997. This is a web-based conference system in which trainers and students can communicate as individuals or as a group. After the introductory session when the purpose of the course is made clear and the work schedule and procedures described, distance learning starts, structured in self-directed learning sessions. Students work to increase their knowledge and skills using the various materials provided for analysis of texts and case studies, consulting websites, working with others and group discussions. Assessment takes place at the end of each stage. Students are asked to complete interim assignments and prepare a final one for assessment. Success in a final examination requiring the students’ physical presence results in the award of a certificate of qualification. All work is directed by the tutor who monitors students’ progress, answers their questions, runs the virtual group forum sessions and generally helps with any difficulties.</td>
<td>These courses lead to the award of a certificate, subject to three conditions: 1) a favourable assessment by the trainer; 2) regular participation – a student must complete more than half the total number of course hours; 3) completion of an online survey of their overall assessment of the course.</td>
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<thead>
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<th>Human resources</th>
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<tbody>
<tr>
<td></td>
<td>The IFB has over 100 staff who manage, mentor, organise, teach, prepare documentation and assess performance. There are also over 500 freelance trainers.</td>
<td>The team responsible for managing the virtual school comprises six people involved in administration, a coordinator and eight freelance trainers, covering various specialist fields who are employed as needed.</td>
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### Case studies

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<tr>
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<tbody>
<tr>
<td><strong>The challenge for trainers</strong></td>
<td><strong>The trainer’s task calls for a great effort to acquire an essential set of skills: the ability to master and pass on the new technology to the students, and to do so by using distance communication tools. This ability is already regarded by trainers as fundamental for running a distance learning course. Communication is another skill that is constantly needed, both for the effective design of training materials such as handbooks, exercises, texts, CD-ROMs, videos and the like as for communicating with students during training sessions in a way that sustains their motivation and interest in the course subjects.</strong></td>
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</table>

The challenge today is to break away from traditional models. Trainers who are still reluctant to adopt new technology are beginning to believe in the importance of updating and broadening their existing knowledge and skills.

The distance separating trainers from their students makes it important for them to develop communication and interest-stimulating skills and to become familiar with ICT technology.