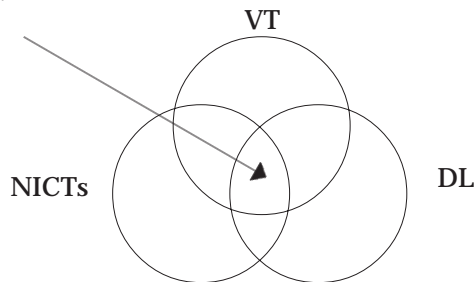


Chapter 1

New information and communication technologies (NICTs) and distance learning in vocational training: what are we talking about?

This report is about the confluence of Distance Learning (DL) and the New Information and Communication Technologies (NICTs) –particularly the Internet– in Vocational Training (VT). The intersection could be expressed through the following graph:

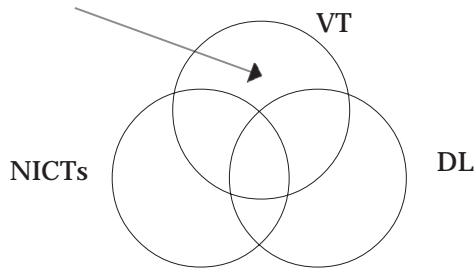


I will focus on this area because it is relatively new and because it is attracting many looks, expectations and investments. Therefore, it is an area where opportunities are increasing and, thus, where the highest risks of failures or problems are being run.

However, even marking this out, it is convenient to take into account a number of fields that are included in this intersection. And I will not avoid the reference to them in several parts of this work because these boundaries are not exact and broadening the look is, in this case, particularly useful.

We will now consider some of the examples that show the importance of paying attention to these areas which are not only “neighbours” of e-learning but are indeed part of it, since they converge in this intersection.

Thinking from the perspective of vocational training



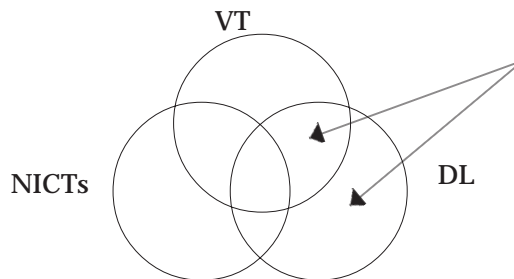
Although it may sound obvious, it is fair to highlight from the beginning that: e-learning actions are, above all, educational actions. They make sense if – and only if– they are in the framework of a clear educational strategy. In this case, they are also educational actions that aim at vocational training. This has several consequences:

- Both when planning and assessing an e-learning activity the criteria that must –or should– prevail are educational ones. Issues such as who we are training and what for, are fundamental to make decisions and they will determine if e-learning is appropriate, or not, or whether we must use one particular technology or other. If this is thought the other way round, it can lead to many failures or to apparent “success” when, for example, a large number of people attend a particular course but they were not the initial target or lack previous training that would have been necessary.
- For this reason, it becomes essential that the teams guiding these processes have sound educational and pedagogical knowledge. Technological aspects are obviously important in these programmes but they cannot be the only ones, nor the most relevant. As we will discuss later, building up the teams to work with these programmes has a crucial dimension since several kinds of different knowledge are to be combined in an appropriate way.
- Besides, in this case, we refer to specific vocational training actions. It is thus not possible to transfer mechanically successful experiences from other educational fields to this particular area. For instance, there are many vocational training areas that imply manual work which cannot be done easily far from a workshop. Although some advances have been made to this respect (simulation programmes, virtual reality, etc.) it will not always be possible or desirable to substitute the workshop with the computer screen.

- Moreover, it is not always advisable to channel “theory” through e-learning and “practice” through classroom-based actions. This separation between theory and practice is usually avoided by VTIs by integrating the classroom and workshop in the same physical space and recovering the idea that vocational knowledge is build up, above all, *through* practice. (cfr. Moura Castro, 1984; Barato, 2005).
- It is important to remember that many vocational training institutions’ main target learners are populations with low access to technologies or in great need of enjoying socialisation spaces which are not easily substituted by “virtual” means.
- As we will see, some interesting alternatives are being designed but they are still key issues to be taken into account.

In what VT areas do you think it is more viable to foster e-learning projects?

Thinking from the DL perspective in general and not only from that which uses NICTs



- Since much experience has been accumulated in the DL field –and particularly in the area of vocational training– this will be very useful. Many e-learning problems are the same of “traditional” DL. For example, the production of materials, motivation, dropouts and the importance of tutoring show very similar problems both in DL using NICTs and in the “old” ways. Knowing how these problems were tackled by the “old” DL systems is extremely helpful today and the experience of those involved in it will be a very valuable contribution. Particularly, when these experiences were developed in our own institutions or –at least– in the vocational training field.

Besides, the “old” label is extremely arguable since many of these tools continue to be of great use nowadays.

In what ways is your institution benefiting (or would benefit) from its previous experience in DL in its new e-learning programmes?

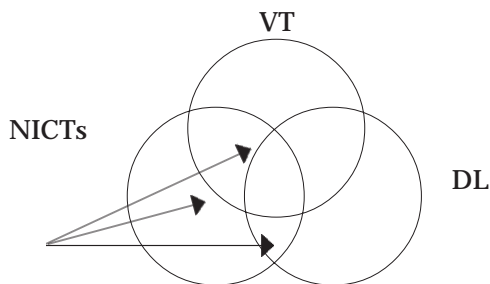
- DL is a mobile concept. In fact, DL had already evolved in the past from “total distance” to combined ways of classroom and distance learning (cfr. Bates, 1995; Moore, 1996). The same is occurring (which seems reasonable and appropriate) with e-learning (cfr. Kaplún, 2000; Bates, 2001, Giusta; 2003; Pelegrín, 2003). Because the face-to-face relationship –between teachers and students, and also among students– allows many activities that are not feasible when no such relationship exists.
- Even the term “distance” is sometimes confusing when defining many programmes. That is why other names have been used –and are still used today– for the same or similar activities: open education, self-training, self-learning (SENA, 1995; Bates, 1995; M. Kaplún, 1996; Restrepo, 2002). In all cases, the difference with traditional methods has to do with the fact that the daily face-to-face relationship among educators and learners, though not disappearing completely, has other characteristics than that of traditional classroom-based systems. On the other hand, other *educational means* (Prieto, 1991), such as educational materials, become important.
- In many classroom-based systems, many elements coming from DL experiences have been incorporated such as a more intensive and complex use of educational materials or educational means (cfr. Pedro, 2001; Contera, 2004). Some even talk about “Webisation” of education (Armellini and Grünberg, 2004), when the Internet is used as a support tool of classroom learning. There are, thus, many mixed forms that converge:



Where would you place your programmes within this line?

- The term *blended learning* is used to locate courses in the middle of the two extremes when teachers and students are requested to attend simultaneously a classroom during 25 to 75 per cent of the total academic time (Pedro, 2003). If the percentage is lower, we would be talking about distance courses; and if there is a higher percentage of attendance we would be referring to classroom training.
- These intermediate ways reveal the potentials that should be catered for, since they seem to combine the good aspects of both delivery methods and avoid many of the problems they both have.

Thinking from the perspective of information and communication technologies (ICTs) –the “new” ones, but also the “old” ones–



- There is also great experience in this field that can be extremely helpful. Many technology-based learning actions of the past will be useful nowadays and they will avoid many mistakes that are recurrent in the technology-education relationship, for example, -“putting the cart before the horse” and deciding first on the technology and then on what educational activity will be done with it (Kaplún, 2000, 2001b). There is also a lot to learn about how to produce quality material for DL: although there are specific aspects for every means or technology, many good educational materials may have a lot of things in common as well. And those sharing such experience may largely contribute now.
- There are “old” technologies that are still extremely useful, whether combined or not with NICTs in distance learning and vocational training in gen-

eral: from the book to the television, the radio or video, sound recording and the phone. In fact, many of these technologies become necessary and converge in the best e-learning or distance learning programmes of vocational training. And some things are still carried out better by the old technologies than the new ones. The book, for example, is much more comfortable for reading long texts than the computer screen. Besides, it does not seem reasonable to waste the investments already made in “old” technologies that are still working perfectly well, without being sure that the new ones can offer true advantages.

In what ways is your institution benefiting (or would benefit) from the experience with “old” technologies for the use of “new” ones?

- Furthermore, we should take into account the different NICTs of the Internet. Depending on the Internet development of every institution, it can be uncomfortable and expensive to use it for certain tasks. Instead of downloading heavy files, it may be easier to read from a multimedia CD or a DVD that allows the integration of texts, audio and video in one material at a lower reproduction cost than older technologies.
- On the other hand, a tool such as the videoconference –which is indeed converging more with the Internet nowadays– permits to get closer to the traditional “face-to-face” educational situation which may imply many advantages.
- Furthermore, it is interesting to look at the amount of technologies that are used in classroom learning actions. It may provide us with a number of clues to think about the potentialities and limits of e-learning. In the field of vocational training, some devices that simulate certain processes, or that allow to show them in a way that would not be possible in “real life”, can be of great use (cfr. Mendes, 2003). For example, to see how a hydraulic pump works “in the inside” (SENAI, 1998) or to simulate the defects of a mechanic system and correct them. The development of this type of technologies can be very well used by e-learning.
- Besides, the Internet is being used as an excellent support to traditional classroom educational actions. So, we could also learn from them. Moreover, it would be interesting to revise in many cases if what is needed is strictly e-learning or if other intermediate ways would be a better option.

- Finally, it is necessary to mention something obvious: in order to benefit from e-learning it will be essential to have sound technological support. Technological problems are complex –and expensive– and they need to be catered for. There are some logical processes of the technological development that the institution should be familiar with, and benefit from, in the best possible way. For example, it would be crucial to know which technologies are more “mature” and have the largest communities of users, which are easily used by our target population and which are the costs implied, etc.

However, regarding this strictly technological aspect, it is advisable to clarify three issues:

- As it is well known, changes in this field occur extremely fast. That is why I would only suggest general criteria since, otherwise, whatever I tell you will be quickly out of date (and even some of these criteria may be out of date soon...).
- The main approach of this work will be pedagogical and not technological. In the first place, because I am not an expert on technologies and, in turn, I believe to have some knowledge and experience in the educational field in general and, particularly, in DL.
- Furthermore, I see this aspect as crucial. In my opinion, a great amount of false expectations have been created trying to find technological solutions for pedagogical problems.

Why (not) talking about e-learning?

What do you understand by “e-learning”?

Is it the same as “virtual education”?

What other terms have you heard to refer to similar issues?

Which one do you prefer and why?

Personally, I have chosen to use the term e-learning because the confluence between DL and NICTs –particularly the Internet– has largely been called this way. Or, to put it in other words, the conjunction between distance learning and telematics. And this intersection, as I have already said, is awakening increasing expectations and investments.

It is fair to remember that the term developed the same way as other “e”: e-mail, e-commerce which refer to mail and trade that use the Internet to develop part or all their processes.

But, in my opinion, the term is problematic since it can contribute –and it already has– to confuse the problems involved in the field. On the one hand, because it can promote the tendency to focus on the technological aspect rather than on the pedagogical one.

But on the other hand, the term e-learning may imply –and there are in fact people who think so– a “different” type of learning (Pedro, 2001; Rojas, 2005).

In my point of view, such difference is not clear and, moreover, it is not necessarily linked to the “e” aspect of that learning. On the contrary, it has to do with decisions that are taken in the pedagogical field but that do not depend on whether technologies are used or not.

For example, (as I will discuss in Chapter 3) higher interaction among teachers and students or higher individualisation of the educational processes are not strictly linked to the “e” aspect and have in fact to do with pedagogical concepts and the way of organising educational actions, either in distance or classroom contexts, with or without computers. Conversely, we are observing very different uses of telematics that show learning concepts and teaching strategies that are quite the opposite (cfr. Kaplún, 2000; Gatti, 2001; Aparici, 2004).

In fact, this is what I have already said (Kaplún, 2001a): there is no “electronic learning”, the same way there was no “printed learning”. Computers and books are tools that can be very useful to help us to learn but the learning experience is, above all, a human activity.

Therefore, the purpose of this work is to discuss the “*non-exclusively classroom learning and telematics*” in vocational training. So, every time I say e-learning, I would be referring to this.