OPEN UNIVERSITY OF CATALONIA
How to Design, Implement and Evaluate
an E-Learning Project

Module 1: E-learning intervention: fields, sectors, design and quality

Reading 1: Fields of e-learning application

The first reading of module one is related to the activity 1.1. "Fields of e-learning application – a debate"

The text is a translated and slightly modified extract taken from
Grau, S. (2007). Camps d'intervenció professional en e-learning. Barcelona. FUOC.

Content

Reading 1: Fields of e-learning application

Introduction

In the opening speech to the World Forum of UNESCO Chairs on November 2002, the general chairman, Mr. Koichiro Matsuura, pointed out the interest of the society in being able to permanently access free online educational resources as a way of humanising the globalisation process and extend information, knowledge and culture to everybody (Matsuura, 2002). He referred explicitly to higher education but his thesis is also applicable to any other type of education, independently of its function and community. Matsuura based his proposals on the real possibilities of ICT in educational contexts and in the socialisation of communities, due to their capacity of transmitting knowledge, values and action models in an efficient and democratic way.

In order to carry out this good intention, governments, companies and organisations have to allocate more funding to help extending ICT use in areas where they still do not arrive.

As far as we are concerned we can at least identify those areas in which it would be especially urgent to apply ICT in education.

[...]

The first part of this reading offers an approximation to possible fields in which ICT integration in teaching and learning, and especially e-learning can improve the environments for education, training and capacity building.

In the second part, we are going to introduce a number of elements that have to be taken into account in the process of ICT integration in educational processes. These elements are often neglected or altered for economical reasons, lack of understanding, time or organisational culture.

[...]

The knowledge about different fields in which educational programs based on ICT can be executed can lead us to the implementation of sustainable e-learning projects and to be in touch with reality without giving up thinking in the future possibilities. "Where do we go from here?" was another question Matsuura raised in his speech.

1. Fields of e-learning application

As a starting point we are going to take as a reference the application fields that are defined in the European Commissions Initiative for E-Learning (according to Area, 2005), where we can identify three main contexts in which e-learning can be useful: the educational context, the corporate context and the context of personal development.

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We can extend this initial classification with other general contexts in which we can already find e-learning initiatives and that can bring about interesting professional fields of action and the development of very diverse profiles of experts.

Application fields of e-learning	
E-learning in the field of education	**Formal education:** - Teacher training - Schools (especially secondary education) - Education for student that to not attend classes (illness or other reasons) - Universities or centres for higher education
	Informal education: - Centres of informal education (for adults with the aim of building literacy, promote social integration or offer occupational training etc.) - Public or private pedagogical resource centres
E-learning in the field of corporations	**Companies:** - of all sectors and sizes - for internal training purposes - for client training - special attention to the companies that belong to the training sector
	None Profit Institutions: - NGOs and associations - Public institutions - Trade organisations
E-learning in the field of personal development	**Cultural institutions:** - Museums, exhibition centres - Cultural environments (monuments, libraries, tourist centres etc.)
	Personal and professional development: - Self-study for personal progress - Self-study for professional progress

Based on this conceptual approximation we can define the following specific application fields where educational projects of e-learning can be developed. We have selected them for this document because they are representative as a whole. There are other fields that are less notorious or still growing. These have not been explicitly mentioned but can be placed in one of the following subcategories.

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> **Reflection 1:**
> How useful do you find the table of application fields. Think of your own situation as a teacher in an institution that is engaged with e-learning. E-learning makes it necessary to change things. These can affect the organisation of an institution, the way different actors work together, their roles and many procedures.
> Do different application fields ask for different types of changes?

1.1. Formal education

1.1.1. ICT integration in the schools

The problems teachers are currently encountering in their work with the students are a widely discussed issue. "Things have changed time ago", they can hear. And it is true that the word "teacher" does not have the same meaning and importance any longer. The traditional teacher was respected in his institution partly due to certain strategies of more or less pedagogical character. But the current problem in the classroom, especially in secondary education, is based on the poorly consolidated structure of the educational system and on the confrontation between the educational values on one hand and the values of parents and families on the other.

Such circumstances require that the teacher has to be permanently up to date, not only regarding his knowledge, but also in his personal and social skills in group management and conflict resolution.

This and other needs have pushed public and private institutions as well as teacher associations to make multiple efforts of creating virtual environments for teaching and content/experience sharing.

The implementation of online teaching and learning methods in order to treat the most concerning issues in an agile way, creating communities, and forums for debate and mutual assistance constitutes an enormous support that has to be further promoted and extended to every context (primary education, secondary education, lifelong learning, university, etc.).

Apart from capacity building, the Web offers and facilitates spaces that teachers can use to create and share their own pedagogical resources that could be

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better adapted to the teaching and learning goals and consequently help developing skills and values that might not be as easily achieved with other methods (cooperation with other educational institutions, participation in international projects, use of the ICT, information management, etc.).

However, the implementation of distance teaching projects is not a novelty for formal educational institutions. Some have already gathered experience in project development in order to cover educational needs of those students that are not able to attend the face to face class due to illness or other reasons. The novelty is the medium and the possibilities it offers to teachers and students in all levels.

Examples:
http://4teachers.org/
http://www.pbs.org/teachers/

1.1.2. E-learning in higher education

Some universities and higher education institutions with face to face tradition have already started offering online education in order to reach different sectors of the society (students enrolled in additional studies, postgraduate courses, doctorates, foreign, students, etc.) and integrating ICT progressively into their context. Universities can count on good professionals and experts in pedagogical methods that know the technological tools that match their needs. Apart from that, universities can afford research actions, evaluations and corrections that many companies would not be able to carry out. In spite of this, many times technology is not sufficiently developed in order to implement the pedagogical approaches that would suite the institution. This is an impediment to a profitable use of technology.

The experience of external organisations in e-learning implementation can be an important support. Sometimes it is necessary to work alongside external experts (e-learning professionals) that are able to analyse the difficulties of the centres and institutions and to offer alternatives based on the experience (best practices) of other educational institutions that operate in different contexts or countries.

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1.2. Informal education

1.2.1. ICT based training for excluded groups

Cultural centres, associations and public institutions make many efforts to achieve the integration of groups in the labour market. They know well how important initial education (reading and writing and basic skills for the workplace) and lifelong learning (the training needed to keep a job) can be.

Therefore they work on both aspects as a method of creating employability by reducing, among others, the so called "digital gap" that exists in these groups.

One of the main problems is the acquisition of computer skills and literacy. It is immensely important to be able to integrate these technologies in a persons life where they can be used for multiple purposes as for example the search for work, the execution of work, the participation in cultural communities, self-assistance or integration via the Internet. These possibilities represent a good stimulation for the target group to attend the offered services, so that the integration of e-learning in the institutions' projects can be seen as another motivating factor, although we always have to keep in mind the possible logistical problems of certain communities or regions (lack of connections to the Internet, time and space problems) apart form the added problem of a lack of study habits and a very probable and important need of orientation regarding self study.

But all these inconveniences can be solved with initiatives of face to face training combined with self study or *blended* elements, so that the student can learn in a reduced amount of time at his own pace and with less expenses, being able at the same time to share his fears, needs and experiences with other people in a face to face environment. This is one the functions e-learning can not - and does not need to - cover.

Immigrants are one of the social groups that can receive assistance and training from such an informal educational institution. Other groups are the functional illiterate, women over 40 years that usually suffer a disadvantage in comparison to men regarding their computer skills, young people before they are at the age of being integrated in the labour market (the market asks for computer skills do not always exist in this group), convicts that could take advantage of e-learning, not only regarding the possibility of receiving job

training but also as an individual or group therapy, and handicapped people that could take advantage of online education as an opportunity for integration.

1.3. Companies

1.3.1. Training for company staff

We have already seen the value ICT based training and training in the use of ICT can have for the teachers. The same situation can be observed in the corporate sector. Continuing training for company staff is a real need, even if in some cases an improvement of the staff training policies would be very recommendable (especially in small or very small companies where the lack of financial resources and time pushes training initiatives back towards lower ranks).

In the last decade companies have started prioritizing continuing training as a strategy for their survival (raised productivity, keeping positions against their competitors, creation of prestigious labels, ability of responding to the consumers' needs, etc.). To do so, they have not only paid attention to the "contents" for capacity building but also to the "methods" that give them agility and efficiency in training processes that have the character of being continuous.

Here we can see the origin of the concept of "lifelong learning" that has already been coined in the seventies (Fosca, 2005) but used very little in the majority of countries until the end of the eighties.

In current modern societies it is necessary to keep learning through the whole life, which is the period of time in which a person is supposed to receive a comprehensive education (personal professional and social development). This normally happens in short training episodes and seeking low expenses, a fact that leads to the unavoidable need of changing the traditional training's contexts and methods; the classroom is no longer the only space in which training happens – and this is where ICT and new teaching methods find their role.

"The new learning models and styles include learning through discovery and research, problem based learning and learning based on the relations with the community and so on, where self management is fundamental." (Varis, 2005)

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In such a framework, ICT can facilitate self-management in learning (independent learning) and the improvement of professional skills. Additionally, ICT enhanced learning is not necessarily limited to the transmission of conceptual or technical knowledge, but it can incorporate a wide range of skills related to individual or group activities like for example management skills (time management, information management, management of the relation between people, quality management), leadership skills (delegate tasks, lead groups, manage teams), and social skills (emotional intelligence, conflict resolution, etc.).

It seems clear that the companies and professionals that know how to satisfy the organisation's increasing demand of training (quality and time and cost effective continuing training) will lead the market of lifelong learning.

E-learning offers these advantages keeping in mind that its aim is capacity building for professionals. It is a motivating and satisfying element that helps professionals to feel necessary and useful while they improve personal and working skills.

Some industrial and service sectors started incorporating e-learning and its training strategies more than 5 years ago (energy sector, banks, telecommunications and advanced services) while in other sectors, as for example the metal, the construction and the transport sector still have not made any progress in this respect.

Reflection 2:
Think about the menace trainers might feel when they observe the development of e-learning. What are the concrete threats? The possibilities of distributing knowledge through technology? The access to enormous amounts of information in the World Wide Web? The increasing possibilities of communicating and networking of groups with similar interests and learning needs? What classical "teacher roles" might be in danger? Or is it all just too much panicking?

1.3.2. Training for company trainers

Just like other professionals, trainers are experiencing the changes brought about by information society. Many corporations that formerly had training departments with very complex structures of trainers and training specialists for the different training fields generated by the company, have now started to

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implement teaching and training methods for outside the traditional classroom. This has brought about many internal changes affecting the company's structure and culture. Some trainers even started worrying about the continuity of their jobs, but the companies that see e-learning as a possibility of getting rid of their good training staff are betting on the wrong horse. It is not possible to implement an e-learning strategy without good trainers and communicators, experts in group dynamics and well trained professionals that can turn e-learning in an efficient method.

In this sense, companies have to start training their own trainers so that they can master the new medium (Internet, synchronous and asynchronous communication technology, virtual group work, online monitoring of training activities, etc.) and use the new environment the best possible way.
We should always remember that trainers are the experts that usually have privileged knowledge about the company's products, services and processes that we should not waste. Their experience in face to face training is indispensable in the process of designing the most adequate virtual teaching and learning strategies for every organisation. There is nobody who knows better than them what kind of previous knowledge the workers have, what level of complexity is necessary for each subject, what departments or areas need more training, where are the most important training needs or difficulties (in which products or processes), etc.

For all that has been said so far, we can state that one fundamental field of e-learning application is the training of the mentioned professionals (already teachers and experts) in their corresponding virtual roles: tutors, consultants, experts for specific subjects, etc. according to their profile and the needs of the company.

The first step has to go in the direction of a cultural change within the whole organisation and, especially, among the trainers in order to make it possible to walk that new way. Capacity building would focus especially on Internet technologies, the use of the e-learning platform, the design of teaching and learning methods, the creation of virtual learning groups, the creation of online contents, the design and the monitoring of training actions, etc.

This function can be developed from the outside with the help of external consultants or internally with the team that initiated the e-learning project. The latter has the advantage that the impulse comes from people that know the specific context.

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Further readings:
Doug Reid, E. (2002). A Classification Schema of Online Tutor Competencies. Proceedings of the International Conference on Computers in Education (ICCE'02).
http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=01186147

Denis, B. et. al. (2004). Roles and Competencies of the E-Tutor. Networked Learning conference 2004. University of Liège, University of Lancaster.
http://www.networkedlearningconference.org.uk/past/nlc2004/proceedings/symposia/symposium6/denis_et_al.htm

1.3.3. Training for direct clients and distributors

The products we generate diversify at a rhythm society can not keep up with. Both technological and traditional products transform and change. And they become more complex so that the consumer needs an adequate training to be able to use them properly. In former times, this need was covered by magnificent handbooks that came with the new television or radio that we bought. Some users possibly read the instructions before using the product for the first time, but the majority chose to follow their intuition or asked a relative or neighbour with more experience.

But when we talk about sophisticated products, as for example the GPS, interactive TV, computers, electronic agendas, some domestic gadgets or technical products or machines for the company, intuition does not always work and the user needs training to be able to employ the product in an efficient way.

In our society with predominant visual and interactive communication, the limitations of printed instructions became clear very quickly, and the consumer started to ask for a kind of training at the same level as the complexity of the product he had bought. The user does not only want information about the product, but also the capacity to use it properly.

Many manufacturers already offer direct training to their clients with the help of their websites or digitalized instructions on CDs. Some have to do it through their distributors or sales agents as they do not sell the product directly to the final client.

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Other companies have decided to create their own training centres that can be face to face or virtual. These centres have the aim of offering the client a wide network of points that help consolidating the product. Some manufacturers offer training almost for free because they understand that such kind of capacity building is an added value that generates interesting comparisons among competitors.

Examples:
Cisco networking academy Program:
http://www.cisco.com/web/learning/le21/learning_events_home.html

Microsoft
http://www.microsoft.com/windows/training/default.mspx

1.3.4. The online training industry

The e-learning sector deserves special attention. It is a sector that generates an increasing amount of work for specialists although it is still a young and emergent sector.

E-learning companies do not always grow at the same rhythm due to the fact that its professionals are young and come from very diverse fields. They do not offer the same kind of products, services and quality either. Some are more concentrated in technology; others focus on contents, teaching processes or the combination of all of these elements.

In the present only some of the companies that are involved in e-learning are able to offer all three basic elements that are necessary to implement e-learning. Some have specialized in selling catalogue or library content, that is created by other companies, to a wide variety of organisations; some focus on customized contents and some offer administration programs, training platforms, etc.

It is certainly difficult to find a provider that is able to create quality customized content and do that efficiently regarding the costs. In many cases, unfortunately the three elements are not compatible.

The reason can be found in the relative lack of experience in the sector that leads to a situation where every client request causes adaptations in the

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internal workflow, changes of the programs for content development, subcontracting third parties, etc. But with more companies moving towards e-learning, the e-learning providers will become more and more experienced, procedures will be improved, professionals will specialize and the prices will decrease.

Hence, there are interesting possibilities of job creation that should not be underestimated. Introducing the role of the external consultant that gives advice in the following areas can lead to a general improvement of the working processes in such kind of companies:

- Design of learning methods
- Implementation of training platforms
- Administration of training actions
- Development or adaptation of working tools (authoring tools, virtual learning environments, administrative tools, etc.) and of internal processes in order to optimize the company's activity.

Reflection 3:
If we think about Web 2.0 tools we usually have in mind programs that are freely available on the Web or distributed under a public license. This has a positive impact on the costs of an e-learning project. Also, many tools come with an open source code, so that the program itself can be changed, adapted, improved, etc.
Web 2.0 tools also tend to be applications with very determined functions (a blog or a forum or a wiki, etc.) which often leads to a combined use of various programs.
Having read about several fields of applications and implementation strategies, how do you see the convenience of basing projects on the use of Web 2.0 in the different fields?

The improvement of some of these companies and the creation of new companies can help to make the whole sector more competitive.

On the other hand the companies that offer products and services to the e-learning companies would be able to capture more clients and achieve better results if they had better knowledge of the idiosyncrasy of e-learning, due to that there is a type of service that the rest of their clients (publicity, communication, marketing, television) do not require.

These companies that are usually very small or even freelance professionals sometimes need information about how to work with companies that belong to the e-learning sector.

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- Photographers or companies that make or sell photographs and videos
- Companies that create contents for the Internet
- Voice recording studios
- Translators, graphic designers, illustrators and web designers

1.4. Non profit organisations

1.4.1 E-learning in NGOs and associations

The nongovernmental organisations and the associations in general have some characteristics in common. We would like to highlight four of them that can lead to believe that the conservation and transmission of their knowledge is a practically impossible endeavour:

- Voluntary staff that enters and leaves the organisation almost without any planning.
- Not easily accessible and very isolated sites.
- The amount of information that has to be transmitted (news, norms, announcements etc.) and the knowledge that has to be passed to new generations of workers and volunteers.
- Little economical resources to be spent on internal staff development due to the fact that the possible benefits are reinvested in the organisations target group.

These elements make NGOs to one of the sectors of special interest for the e-learning sector. Online training solutions can be extremely convenient for them because most of them operate internationally which adds the element of cultural and linguistic diversity to the points we have already mentioned. Precisely in these cases, e-learning can contribute with its socialising potential.

For NGOs it can be especially interesting to work with open source programs in order to control the costs. Open source programs are cheaper and more flexible and can be adapted to many different contexts (networks, operating systems, hardware) and they guarantee the same level of quality as any other license product.

The professionals that work in this sector have to be especially aware of the cultural (and not only linguistic) differences when it comes to creating virtual material that has to be compatible in the whole organisation. It is very

advisable to make sure that representatives of all the areas or sections of the organisation get involved in the design of methods and contents.

1.5. Cultural institutions and leisure environments

1.5.1. Educational work in cultural institutions

Among the best represented collectives in the world of culture (museums, exhibitions, monuments, and famous buildings) there are the formal and non formal educational centres. Sometimes we can find examples of coordinated work between cultural institutions and educational centres in order to create educational material that can help to learn and to develop a certain pleasure related to the visit or the study of cultural sites or objects.

Many of these spaces have created printed or digitalized didactic material that can be worked with before, during or after the visit, helping to achieve the objectives of the trainers or teachers.

It would therefore be interesting to encourage institutions to create and offer these materials virtually. The mutual benefits would be important. We are not only thinking of web pages offering information about the things that can be visited, but of a virtual environment where people can:

- Present materials that help to work with the selected subject in a pedagogical way (have a deeper look at the most important aspects, widen the field of study, evaluate knowledge, etc.).

- Offer complementary teaching and learning materials to the teachers for transversal work with other subjects.

- Offer online access to sites that do not allow real visits.

- Offer access to groups that are not able to visit the real sites due to different impediments.

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- Evaluate the level of participation, compensation and satisfaction within the visitors based on the responses in the online exercises and on the evaluation of the activity.

- Disseminate the culture and the knowledge about the sites in other communities, countries or areas.

Example:
Virtual Museum of Canada:
http://www.virtualmuseum.ca/English/index_flash.html

1.6. Personal development

1.6.1. Self instruction for professional and personal improvement

On a personal level, Internet turned out to be almost exclusively an inexhaustible source of information. This is still the same, but at the same time, the World Wide Web offers educational contents that we were used to find in different formats.

It becomes increasingly easy to find in our libraries books about personal and/or professional development or self instruction. They deal with contents related to the improvement of inter-personal relations and the relations we establish with our environment throughout our whole lives.

In recent times we can find such kind of subjects also in Internet forums, virtual encyclopaedias, e-books, or books on CDs offered in the libraries themselves. Many of these contents are offered for free on the Internet and with the support of more or less prestigious web portals. Even the libraries promote them as a complement to the printed content.

Seeing this development, it seems to be clear that there is a market that justifies the creation of web based content for people that are interested in comprehensive development. Such a target group can enjoy such content at a good price from home, providing that they have basic knowledge in the use of ICT.

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The application of e-learning methods for the field of personal development seems therefore to be justified. The sector is supposed to have a great potential for the future.

At the same time we have to see the great advantage ICT application in education can have for people that live far away of the important cities and towns. Every year the course enrolments in distance education courses (now mostly offered over the Internet) by students living in isolated areas increase considerably. These groups traditionally are not used to an easy access neither to training and education nor to technology. These days the access to both aspects integrated in the concept of e-learning is already a reality.

Nowadays it is the public and private institutions themselves that promote this technological change in rural areas as a dissuasive means to avoid further rural exodus.

Consequently it is of common interest that rural areas receive sufficient coverage regarding online educational services.

Reflection 4:
Can you think of possible advantages and disadvantages regarding the integration of e-learning systems in the presented fields of application?
Think of possible difficulties or resistance in relation to the necessary social and organisational changes within the institutions.
Keep your reflections in the context of the possibilities the Web 2.0 offers us