Lifelong learning for the Italian Public Administration: the MarchE-Learning Project

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Abstract:

This paper describes a local experience for the development of a framework program to set up a Continuous Learning System for Public Administration employees of Marche Region, in Central Italy. Such program belongs to a greater national program, aimed at modernizing the Italian Public Administration by means of the application of ICTs. This program is also part of Italian participation in the European Union's Lisbon Strategy, aimed at turning Europe into one of the most competitive knowledge-based societies in the world. The activity aims at setting up a network of reference PA workers in underprivileged areas of the Marche Region, and training them to detect needs that will be satisfied through a network infrastructure to carry out e-learning activities.

1 Introduction

In March 2000 the European Council met in Lisbon and launched the Lisbon Strategy [5], also known as Lisbon process or Lisbon Agenda. It deals with the transition to the so called "knowledge based economy". The Lisbon strategy aims strategically at:

- promoting innovation as the motor for future change,
- developing a learning economy,
- carrying out social and environmental renewal to overcome low productivity and stagnation of economic growth in the European Union.

The Council stressed the importance of the adoption of new Information and Communication Technologies to reach those training and knowledge levels necessary for a competitive society for the third millennium. Following the Lisbon meeting, the European Union launched a set of initiatives to apply new technologies to training and education as well as to governance. The Barcelona European Council in 2002 [6] called on the Commission to draw up an *e*Europe action plan focussing on the widespread availability and use of broadband networks throughout the Union by 2005, the development of Internet protocol IPv6 and the security of networks and information, eGovernment, eLearning, eHealth and eBusiness. Accordingly, the Commission launched a number of programs sustaining projects to carry out pilot experiences and to define quality standards and benchmarks. This remarkable effort has seen European Academic Institutions, Public Administration Offices and private companies actively co-operating and one of the results has been the elaboration of syllabuses for

definition and certification of competencies for on-line teaching [20] and repositories of best practices.

Each country within the EU applied national strategies to put the agenda into practice. In Italy the Ministry of Innovation and Technologies in 2002 published its "Guidelines for the development of a knowledge society", declaring that training through e-learning was one of the ten goals of the Government plan. Concerning Public Administration the guidelines recommended the development of e-Government and the use of ICTs at the level of both central and local government. The guidelines even set a goal of carrying out at least one third of training activities for public administration personnel through e-learning by the end of 2005. In January 2004 the CNIPA (National Centre for Information Technologies in Public Administration) was set up to assist Public Administration institutions to develop forms of e-government, manage and supervise communication technological structures used by the institutions and carry out training activities for the personnel. The CNIPA depends directly from the Council of Ministers and is the result of the fusion of pre-existing public organisations.

In the field of e-learning for the personnel the CNIPA has been very active and published a very accurate set of guidelines for the implementation of training activities in e-learning [2], and a Vademecum with detailed instructions concerning all phases of the development of an e-learning training project, from need identification and target definition to implementation, monitoring and evaluation [3]. In these publications CNIPA has given special attention to the organizational aspects of training, stressing the importance of motivation as a fundamental element in adult education. Thus CNIPA recommends the institutional official support to training activities, which should mean availability of time, space and structures as well as positive influence on the employee's career. On the other hand, CNIPA's work stresses the central role within institutions of selected and specifically trained employees who are able to identify training needs in order to improve the fulfilment of the institution's mission. In 2005 CNIPA has also set up a repository of learning contents to make possible for any Public Administration office the re-use of materials produced by the Centre or by other offices.

2   Motivations and Background

Because of its strategic importance within the so-called "Knowledge Society", Lifelong learning is an hot topic in technology enhanced learning research, and different projects have been developed worldwide. Thanks to its importance and pervasiveness, the topic has been developed across different Programs (higher education Programmes, training on the job Programmes, etc.). As examples, it is worth to remember all the European programs aimed at supporting lifelong learning initiatives, such as the Socrates, Leonardo da Vinci Programmes [8], the European Social Fund (ESF), and the TEN Competence European network [18].

The interest in lifelong learning is not limited to Europe and European Research Policies. As an examples, we can remeber the Taiwan National Science and Technology Programme of E-Learning [13] and the Cyber Learning Centre Plus [4] for Hong Kong's public servants.

In Italy different Programmes have been launched for promoting lifelong learning. Just as examples, we can remember: the experience of ID (InteractiveDistance Learning) an e-learning project promoted by the Italian Ministry of Justice with the purpose to establish a long-life learning platform based on the web technology to teach legal content to the Ministry employees [14]; the ESF funded TRIO Project [19], aimed at supporting lifelong learning of citizens and the training on the job in the Tuscany Region; the "Rete Interregionale Tecnologie per la Formazione (RITEF)" (Inter-regional network for education) [16]. Specific

projects aimed at supporting lifelong learning of employees of Public Administrations have been also developed by using technology enhanced learning: we will remember the SELF project, promoted by the Emilia Romagna Region [17]; the PATENT (Public Administration Training European Network for the Harmonization of Training Approach) Project [15] and European Senior Civil Servant Initiative [7].

All these Projects focus on different aspects of lifelong learning practices and technologies, such as the reusability of learning materials, the development and delivery of specific Courses, the development of learning networks, or the pedagogical and didactic efficiency and efficacy of technology enhanced learning.

So far e-learning training activities are carried out, mainly using the asyncronous mode, to deliver specific courses on topics concerning information technologies and Public Administration innovation, without the creation of real comprehensive systems [12]. Even at central level there are few public institutions that may count on an integrated ICT system for the management of training.

In fact, the lifelong Projects and Programmes for PA follow in general a traditional pedagogical schema, in which the educational needs are firstly detected and/or recognized by experts, and the Course, devised according to the educational needs to be satisfied, is then devised, implemented and delivered. However, the educational needs within a continuous education paradigm are subject to a rapid development and change. Therefore, educational needs have to be periodically detected and updated in order to be included within an efficient and timely lifelong learning framework.

The Continuous Learning System of Marche Region aims at becoming one comprehensive system able to support the lifelong learning cycle of life. The MarchE-Learning Project, which belongs to the set initiatives promoted by Marche Region, is firstly aimed at developing a permanent framework for detecting the educational requirements of employees working for the Italian Public Administration, especially on e-government matters. Within such a framework, the first step of the Program is aimed at training some employees within the Public Administration itself to be able to detect the needs of their Organization.

The first objective of the Project is to teach a representative group of public administration employees the ways in which the analysis of the requirements is to be carried out, examining best practices, tools and methodologies.The goal of this step is to make people in the group able to *autonomously* detect the educational needs within their own organizations. By making empoyees within Organizations able to detect autonomously the education needs of the Organization, the Project aims at reaching a twofold benefit: on one side, to increase learners' engagement, awareness and control over their own learning needs; on the other, to increase the effectiveness, efficiency and timeliness of the recognition of the educational needs themselves.

The second step of the MarchE-Learning Project is aimed at offering courses concerning e-government issues in blended mode. This second step can be contextualized within the e-learning activities for Public Administration carried out according to CNIPA guidelines [2].

The development of a framework program to set up a Continuous Learning System for Public Administration personnel of Marche Region is a local example of the effort to reach the proposed level of e-learning training and to apply CNIPA's guidelines. Actually the goal of delivering one third of training through e-learning is still far from being reached. Most Training Offices within the Public Administration structure have made investments to set up basic IT tools, mainly for organizational and management aspects of training, aimed at improving the planning of training activities and at speeding up routine procedures. .

A basic aspect of the development of the system is the completion of the technological communication infrastructure. The government of Marche Region already has a fairly strong

broadband network structure connecting all local Public Administration offices, down to Province level. To understand Italian administration system we have to clarify that a Region is the largest local administration unit, and it may include a certain number of provinces, which, in turn, are composed of many municipalities. Mountain communities are composed units including more municipalities, usually within the same province. At present the government of Marche Region is working to include in its network all administration units, even the smallest and most difficult to reach, combining its structure with the normal telephone network and local WiFi networks. So far, the regional government has used a proprietary Electronic Learning Environment, but this program is planning to start using an Open Source Learning Management System, in line with suggestions from the central government.

The other main aspect of the project is the methodological and organizational framework, which will be discussed in this paper.

3   Program Framework

Marche Region covers an area in Central Italy between the Adriatic Sea coast on the East and the Apennines Mountain range on the West. Within this area there are major differences between coastal areas, which enjoy fairly developed communication structures and facilities, and mountain areas, where people often live in small villages which are difficult to reach, because of lack of good roads and ICT infrastructures. The landscape also includes a series of parallel valleys reaching up towards the mountains from the coast. In such a situation it was very important to pay special attention to disadvantaged areas, in order to reduce differences in service availability and promote social inclusion.

The MarchE-Learning program has the long term goal of creating a service structure for human and technological resources at the level of Marche Region, introducing e-learning in local administration institutions. The action is being carried out thanks to a double financing action: on one side CIPE (Inter-Ministry Committee for Economic Planning) provided funds to sustain Public Administration training in disadvantaged areas, on the other CNIPA offered economic support to create the technological infrastructure to host e-learning training for the personnel of Marche Region. The part of the activity aimed at sustaining disadvantaged areas involves the selection of workers in mountain site offices who shall be trained to become part of a network for the detection of training needs, thus contributing to the planning of future training activities.   At the moment there are 15 administrative entities involved in the program: 13 mountain communities and two municipal administrations.

The mid-term goals of the program are:

- the set up of a WEB based Environment
- the automation of work processes within the Regional Training School, including monitoring and evaluation activities
- the creation of a network of reference workers, whose training is currently being planned and will be shortly implemented
- the definition of a methodology and survey tools as basis for a permanent process of detection and analysis of training needs.

In order to fulfil the above objectives the work has been organized into 8 work packages and assigned to three different work groups.   One group is working on technological infrastructures, the second is working on the internal processes system while the third is taking care of the network of reference workers. This last part of the program involves political and institutional aspects, since it includes the establishment of contacts in public institutions, the communication of the program purposes, the selection of offices and workers.

The first step of the activity is the selection of a group of workers inside offices in disadvantaged areas: they shall be employees who are in a position to understand the training needs in their institution, besides being motivated to acquire new skills, some of which related to information and communication technologies. The selection shall be preceded by two preliminary activities:

- an inquiry on the organizational structure of mountain communities aimed at defining functions and competences already existing within the organizations, assessing the present situation of personnel training on samples that may be representative of the whole region, gathering data for the definition of a draft map of possible training needs and a model for continuous detection of such needs, choosing the reference personnel within those organizations assessed during the inquiry as well as preparing a questionnaire for employees in order to obtain a more accurate picture of the identified competences and functional areas
- the definition of a set of qualifying indicators for the profile of the reference worker, to be used as a tool to identify the most suitable people for such role.

The goals of the first step will lead participants to be able to:

1) acquire basic knowledge about the learning processes;

2) define goals and objectives of a learning program according to the educational needs which have to be satisfied;

3) know the models underlying educational needs detection;

4) select an appropriate model in order to detect educational needs in the context in which everyone operates;

5) interpret the results given by a model for educational needs detection.

The inquiry shall be carried out through interviews with managers of the involved mountain community offices. Interviews shall be focused on the state of art of training, need detection and training offer within mountain communities in the present situation. Information obtained through the interviews shall be used to prepare a questionnaire for training need detection within the Public Administration of Marche Region. The outline of the interviews includes a first section with questions on services offered to the public and ways to access such services, on communication and co-operation with other local administration entities, on already existing ICT infrastructures. A second section of the interview is about training need detection, while the last section concerns the present situation of training offer, including questions on the modes of delivery, the production of course contents, the availability of infrastructure for on-line training and its characteristics and accessibility, the monitoring and evaluation activities, if any are carried out after training delivery.

The work group has already defined the indicators and pre-requisites for the selection of reference workers.

- They must be medium-high level employees, who have a clear vision of their institution's mission
- They must have been in the Institution for at least two years.
- Their role within the institution can be different, but hopefully they should have experience in different areas of administration, most desirable areas being training, information systems, human resource management.
- They must have organizational and/or training competences.

- They must know e-Government procedures and services, as defined in the above mentioned CNIPA guidelines
- They should have already acquired experience in the implementation of e-Government policies and/or in the planning of functional innovation activities within Public Administration services.
- They must be experienced in team work
- They should have personal experience of training courses delivered at least partly on-line
- They should have some experience in projects in association with other institutions within the Public Administration.

The selected workers shall be trained through a blended mode course to apply methodologies for detection of training needs within their institutions and to apply a set of analysis procedures. The e-learning and distance learning element of the course shall be seen as a model to design and deliver training activities, since such methodology is specifically suitable for an area of intervention where users come from different organizational environments and from geographically different situations. In fact the workers who shall act as need detectors and who will be the first users of the training structure come from institutions that are different in size and within their organizations they may have very different roles. These workers shall develop into a new professional profile, specialized in detecting and analyzing training needs by using the most effective tools.

Thus distance learning represents the most appropriate methodological and organizational choice in order to fulfill the following short term objectives:

- Creation of a training offer which is relevant to present needs at different levels among the personnel of the Public Administration of Marche Region
- Creation of a technological communication infrastructure which in the future shall permanently support exchange and circulation of knowledge and experiences within the local Public Administration
- Valorization of knowledge and experiences developed in the local Public Administration for their dissemination to all concerned personnel (Knowledge Management).

The pedagogical approach of the courses has to be the socio-constructivist, problem-oriented and active paradigm, while a strong focus shall be placed on the social aspects of learning, fostering the development of a Community of Practices, which, according to Wenger [21] is a learning organism with three main aspects:

- Reciprocal commitment, understood as participation, involvement and responsibility towards the community and its activities
- A shared repository of resources, meant to be the arrival point of common activity
- A common enterprise, in the sense of negotiated sharing of objectives and strategies.

Participation produces sense of belonging, and this should be very appropriate in the process of organizing a network of people to carry out a specific function.

According to the principles of project management, the activities for the on-going phase of the program have been distributed among the work groups according to eight packages, as listed below:

1. Overall Program Management
2. Coordinating activities and communication

3. Analysis and strategies
4. Basic technological infrastructures
5. E-learning services structure
6. Content production for e-learning course
7. System set-up
8. Training services delivery, monitoring and evaluation.

3.1 Overall Program Management

It includes strategic planning, implementation control and result evaluation, and it is carried out by the team of Università Politecnica delle Marche.

3.2 Coordinating activities and communication

This work package is entrusted to the Regional Public Administration Training School and includes the monitoring of activities, the choice of specific didactic methodologies for the selected target, the presentation of the program and its methodologies to the reference workers and all involved institutions, the organization of workshops with course target to detect specific needs and finally the evaluation of the whole program

3.3 Analysis and strategies

The university team is responsible for this work package which includes the selection of a list of reference workers inside those institutions reached by the service and the analysis to define procedures for detection of users' training needs. All relevant data shall be gathered on-line through questionnaires and/or interviews and then processed. This work package also includes the design of procedures which shall be the base for future services, with specific focus on instruments and methodologies for the transition to the new integrated training system. Within this package is also included the definition of questionnaires and templates for interviews. Finally, detailed and overall analysis of the results of the learning process, as well as interpretative reports and proposal of guidelines for program future activities are part of this unit of activity.

3.4 Basic technological infrastructures

The university team shall also be responsible for the study of accessibility and usability of the training system, the implementation of dynamic CMS modules for information communication (News, Courses, Schedules,…), the implementation of User Management modules for dynamic management of users and their training profiles, the implementation of modules for communication with the Data Base system that may accept new services through a homogeneous protocol, the starting population of the Data Base with users' forms and profiles as well as knowledge relational networks.

3.5 E-learning services structure

This work package, in charge of the University team, includes the implementation of LMS modules to integrate in the platform the functions of Forum, Glossary, Library, FAQ, Virtual class with support for tutoring and social learning, News, Reports about student profiling and course profiling. It includes the implementation of modules to process feedback data from LMS and to create automatic reports, as well as the implementation of modules for creation and on-line delivery of questionnaires and interviews, with automatic data gathering and aggregation.

3.6 Content production for e-learning course

The university team shall look after the planning of didactic strategies and delivery modes of the courses, and consequently elaborate contents for the course aimed at the network of reference workers and produce the relevant Learning Objects to publish in e-learning mode.

3.7 System set-up

This part of the program shall be carried out by the Technical Team of Marche Region Government, and includes the set-up of a server unit suitable for the specific working requirements of the selected software and the work load required by the number of users of the system; it also includes the installation of all necessary software applications as well as the testing of all on-line and off-line activities.

3.8 Training services delivery, monitoring and evaluation

The university team shall finally be responsible for service delivery, from assignment of passwords and distribution of training material for the use of e-learning services, to course delivery and platform maintenance as well as gathering and analysis of all relevant data for monitoring and evaluation.

4 Learning Activities

The first step of the Program includes four modules on basilar contents on educational needs detection followed by practical online activities. According to the pedagogical inspiring theories, that is, active and collaborative learning theories, the practical activities take the most part of learning activities.

The first module is devoted to support and promote learners' awareness on the importance of education and educational needs. The participants are required to experience directly the importance of such awareness by carrying out a focus group, followed by a questionnaire on their own educational needs. Moreover, because of the importance of group dynamics for the success of collaborative learning, a part of the module will be dedicated to develop groups interactions.

The second module focuses on the basics of the learning processes; it will introduce the definition of Learning Organization, the cycle of life of learning projects, the importance of competences development, the models for educational needs detection, and surveys different models of education within Organizations. A special attention will be paid to the construction of a shared and appropriate lexicon.

The third module will deal with an in depth investigation on models for educational needs detection. It will focus on the steps of empirical work for educational needs detection.

Moreover, the learning environment and its features will be explicitly introduced. The focus will be explicitly put on collaborative learning tools made available by the environment, as well as on collaborative learning processes. Furthermore, the tutors will be introduced and the role of tutors will be explained. The arrangement of the personal profile of each participant will end the module.

The work will continue online by means of forums discussion on the materials given in the in presence meeting.

The fourth module will discuss on the work done by participants in oline mode and survey some real world case studies on educational needs detection, in the light of what participants have learned in the previous modules. A special attention will be paid to the analysis of the relationships of these case studies with the whole cycle of life of educational project in which they have been carried out. Participants will be required to continue online the work and to trasfer what they have learned to the needs of their own Organization. As a result, participants shall discuss the choices regarding the procedure, the methods, the paths and the channels each of them has followed.

The fifth module will be devoted to a discussion on positive and negative points of each approach. Participants are required to express their doubts, if any, and to discuss collaboratively on advantages and drawbacks of the different approaches, with particular regard for the structure and needs of every single Organization.

As an overall result, each participant will realize a project work in which he/she chooses an approach and develops the educational needs detection accordingly, and will discuss collaboratively the strengths and the critical points of the approach.

Further activities, devised within the second step, will concern the delivery of a Course – devised according to CNIPA guidelines [2] – focused on e-government. The second step will take carefully into account the educational needs detected during the first step, and will offer a chance to satisfy them.

5   Monitoring and evaluation

The aim of monitoring and evaluation of an on-line course is to improve the quality of training and to check the acquisition of the skills targeted by the training plan. Monitoring takes place while training is going on for the purpose of controlling effectiveness and correcting any possible malfunctioning. Monitoring should guarantee that any possible shortcoming detected in service quality receives suitable corrective actions, since quality is represented by those characteristics which enable the service to satisfy expectations and training needs, in line with the users' learning goals identified in the training plan.

There are many different aspects to be monitored and evaluated and each of them is aimed at detecting specific shortcomings or malfunctioning, as well as positive aspects, of the training process. The main aspects to be monitored concern: the user, the process, the product. Monitoring and evaluation are complex processes composed of different phases, each of which has its own objectives, methodologies, tools and schedules. Data gathered through monitoring and evaluation are then inserted in a data base to testify individual training itineraries and overall system performance.

In our program, the monitoring and evaluation framework has been designed upon the theoretical bases of Kirkpatrick's four levels of evaluation [9], combined with the practical checklists provided in CNIPA's guidelines for e-learning training activities for Public Administration [2] and in the methodological guide for quality analysis in distance training

over the Internet, produced by Funcación Universidad-Empresa de Valencia [1] as the result of a European Union financed project.

In the project's simplified framework, a first phase of monitoring takes place before the beginning of the course, and concerns the knowledge and skills the user already has, as well as his/her motivation and expectations; it is carried out using questionnaires or focus groups and it allows the course manager to prepare recovery actions that may be ready when the learning activity is already under way, or even activate a personalized learning itinerary. Then we have a phase of process monitoring, in which the learner's participation is measured through analysis of the platform automatic tracing system, in order to understand the development of his/her interaction skills; in this same phase it is also possible to verify the service quality, checking the efficiency of the back office of the program. Moreover, the overall efficacy of the course has to be carefully checked during delivery: monitoring of the learning process is carried out through self-evaluation tests or formative tests, as well as looking at the online behaviors of the learners. Other phases are about product monitoring, to check the effectiveness and usability of learning objects, and learner monitoring, to verify the social atmosphere in the user group, the level of satisfaction, the perceived utility and effectiveness of the course in terms of organization, didactic strategy, resources and technology, through analyzing various kinds of educational data, such as log data, text data and exercises done by the learners, as well as questionnaires [10]. The next phase shifts from monitoring to final evaluation, to measure the level of success in the learning process.

According to Kirkpatrick [9], it is possible to distinguish four criteria on which we can base the evaluation of an e-learning program:

- Reaction, that is how the learner felt about the training experience
- Learning, that is the measurement of the increase in knowledge and skills after the program
- Behavior, that is how much the learner's behavior improved or changed after the training activity
- Results, that is the effect the training activity had on the organization environment.

Of course there are different times and instruments to carry out all of these forms of evaluation. Actually, in most cases evaluation is limited to the user's reaction, verified through a questionnaire, and the user's learning, controlled through final tests, since some time has to pass before changes can be detected in the learner's behavior and even longer has to pass before the institution can realize the impact of the new knowledge acquired by the employee on work organization and effectiveness. In the MarchE-Learning program the idea is to follow the indications provided by the report "Designing and Evaluating training, a guide for Public Administrations" [11], that is to carry out all four types of evaluation, so that resources used in training can be used in the most effective way, to bring a further contribution to the growth of service quality.

6   Expected results

As it may be evident from the double source of its funding, the MarchE-Learning program has two different levels of expected results. On one side, thanks to the activities supported by the Inter-Ministry Committee for Economic Planning, there is a first shorter term result of a network of specially trained workers who will be able to identify training needs within their Public Administration units in disadvantaged areas. On the other side, CNIPA's support has a simpler short term result of a basic infrastructure for communication and on-line distance

learning that is going to be used for the up-coming training course for reference workers, but CNIPA's intervention and guidance has a much further reaching expected result.

The reference network for training need detection and the technological communication infrastructure are set up with the aim of developing into an integrated training system for the whole of Public Administration entities of Marche Region. A long term result would then be an e-learning portal connected to a training need detection network in order to offer all the personnel of Public Administration entities of Marche Region easy access to a set of relevant resources for training and updating of their personal and professional skills. The fields and sectors in which training activities will be carried out may include work procedures, law and administration, human resource management, organization management, information and communication technologies, languages and any other field which may be identified by the need detection network.

The e-learning environment will be part of an integrated training system which will be prepared to carry out most activities connected with training and on-line training: need detection, planning, production and organization of learning activities, course delivery, tutoring, monitoring and evaluation, readjustment. Furthermore the system should be an important instrument to let the culture of LifeLong Learning grow among Public Administration personnel, in order to foster individual self-realization, professional updating and social inclusion.

Obviously, such an ambitious program has to be developed step by step, and in this paper we have only discussed what has already been defined.

7   Conclusions

It is difficult to draw conclusions from an activity that is still in progress, but what can be stressed about this experience is the strategic value of co-operation between Public Administration and Academic Institutions in order to offer the former the most updated knowledge on state of the art of Information Technologies. Especially in Latin countries like Italy, such projects are required to overcome traditional problems of governmental offices, which tend to be slow and become attached to their procedures rather than be open to changes and improvements.

On the other hand, the most innovative aspect of the program is the creation within the Public Administration of a new professional profile: a person who masters some methodologies to detect and understand the training needs within his/her organization and can be the reference point for the elaboration and continuous adaptation of an institutional training plan. The Marche-Learning project aims at properly addressing problems connected with continuous detection of training needs.

Eventually, the program is trying to offer a setting to verify the fact that e-learning, in spite of initial heavy investments, once it becomes an established procedure, can both save resources and offer ways to make training more effective and available to employees who otherwise would not be reached because of problems with transport, communication structures or work schedules.

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