
NETSTART – ACHIEVING NEW ABILITIES WITH ICT

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Abstract: This work presents the NetStart project. The project main objective is to develop a set of tools and learning environments that allow people to develop, or update, abilities. The first step of the project, as it is supported in a set of Web based tools and ICT technologies, is to give their users some basic computer skills. And then, users through a cycle of continuous improvement, supported in virtual learning environments, will be able to gain, or improve, new abilities. This continuous improvement cycle is called IPAT- Personalized Itinerary through Technological Adaptation.

In its first phase the IPAT will allow disfavored people like unemployed, young people with low qualifications and older actives acquire the necessary abilities to use the basic Web and ICT tools. This phase is supported in a Flyer and a CD-Rom. The Flyer shows the basic steps of turning on a computer and accessing the CD-Rom. The CD-Rom is composed by a set of interactive tutorials that, in a very clear and simple manner, will allow the user to acquire competencies in using the basic ICT tools and, also, the tools used in the project.

In its second phase the IPAT will lead the user to trace its goals of career, using for that, professional profiles adjusted to the work market of and adjusted to the new and emergent types of jobs, in order to take a place in the work market. This phase is supported in a web-based diagnose tool and an e-learning platform. The last phase of this cycle consists in the participation of the user in the online training. This phase only depends in the motivation and the needs of the user. It was privileged the e-learning system known as blended learning (b-learning), and it was also defined that all the evaluation would be done physically in a classroom. This is important for the credibility and recognition of the abilities.

Keywords: abilities, e-learning, professional profiles, training

1. Introduction

Northern Portugal region, and specially the region of Viana do Castelo, is facing a real problem. New jobs are emerging; unemployed people and older employees need to develop new abilities and competencies [2]. Another problem is the lack of knowledge and usage, among this group of people, of the new Information and Communication Technologies (ICT). This region also has a relevant number of young people with very low qualifications that only can get low qualification and low wage jobs [1,4,6].

ICT allows in a more flexible and easy way, namely through e-learning, to rapidly achieve or develop new abilities [14]. So it's necessary to increase the knowledge and the dissemination of these new technologies within our region.

2. Main Objectives

NetStart Project main objectives are the development of several instruments that will allow, in an independent way, people, especially unemployed, young people with low qualifications and older actives, to begin using ICT and then being able, supported in those technologies, to develop new abilities, thus becoming more competitive and capable of facing new career challenges.

Netstart is a project in the EQUAL¹ Initiative, and is funded through the European Social Fund. The EQUAL initiative is a laboratory for new ideas, implemented in and between Member States, to the European Employment Strategy and the Social inclusion process. Its mission is to promote a more inclusive work life through fighting discrimination and exclusion based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation.

¹ http://ec.europa.eu/employment_social/equal/index_en.cfm

Netstart Project is focused on the abilities development, beginning with basic computer skills needed for accessing the project web based tools, and proceeding, according with the established objectives, through a cycle of continuous improvement of the abilities. For the achievement of all these goals it was defined the Personalized Itinerary through Technological Adaptation (IPAT). This Personalized Itinerary consists of two distinct phases. The first phase will emphasize in giving the target users the first steps in using and accessing the basic ICT and web tools. This phase is supported in a Flyer and a CD-Rom. The second phase, the more important and also the nuclear one of the project, will lead users to trace its goals of career, using for that, professional profiles adjusted to the work market of the region and, also, adjusted to the new emergent jobs, in order to take a place in the work market. This phase is composed by a web application and an e-learning platform.

3. Diagnostic

All the members of the NetStart partnership noticed, in the development of their normal activities, that people were worried with their professional development. This was a way of increasing their employment capacity and also their opportunities for better wages. But their concerns, regarding their professional development, were not followed by the organizations main concerns and, also, by the market needs, thus, this was leading to low levels of employment and qualification.

A question arose: “What is the most suitable model to develop, in a continuous way, training, that could be used by unemployed and employed people, capable of conciliate practice and theory?” This problem was, in an initial phase, formulated in an empirical manner based in the experiences of the partnership. Afterwards, this was validated through the diagnose phase.

For the diagnostic analysis was taken in consideration micro, macro and local data. To acquire micro data it was decided to make an inquiry in all the region companies (mainly Small and Medium Enterprises- SMEs). This inquiry was related to four distinct areas: target users/public, Internet access and type of connection (low or high bandwidth), analysis of technological evolution within the organization and evaluation of their training program and, finally, their sensibility to training supported in e-learning [10,12,13].

The macro data was obtained consulting National and European Governmental Organizations as: Instituto Nacional de Estatística [1], the National Action Plan for Employment [2] and the European Employment Strategy [3]. Finally, to obtain local data were organized meetings - called focus groups - with all the local entities concerned with the employment questions. The entities participating in those focus groups were Unions, Enterprise Associations, Regional Associations and the National Employment Institute/ Instituto de Emprego e Formação Profissional [4].

It was possible to concluded, after all the data analysis, that: there was a great gap between the training, people were doing and the real enterprise needs; ICT technology was not fully used within the organizations, unemployed people were mainly in the range of 35-40 years old having great difficulties in using ICT, in the region there was not a strategy for the development of ICT supported training, the region was not aware of the advantages of e-learning and b-learning, the main reasons for the inscription of unemployed people in the local employment service [11] are shown in Figure 1 (it must be emphasized that “fired” and “end of short period job” are the most relevant components).

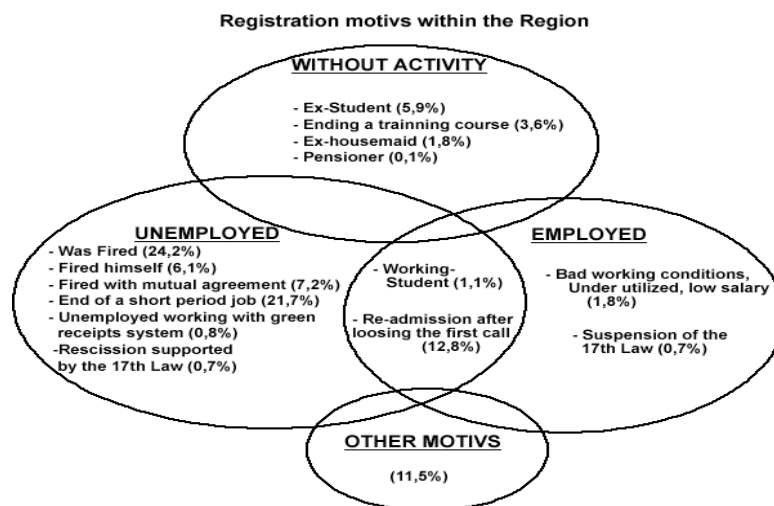


Figure 1. Main reasons for the inscription in the Local Employment Service

With all the previous results, it was evident that it was important to put organizations and people seeking, in terms of training and abilities, the same solutions and results and, thus, it was necessary to build a bridge that would be the shortest path between the enterprises and the society.

The NetStart Project was, therefore, organized in a way that could support and develop all the economic tissue in the constant acquisition of knowledge through a technological platform that would be available to organizations, older, unemployed and employed people. This platform would be concerned with the abilities development and the professional orientation, leading, consequently, to a high employment success rate.

4. Learning Pathway Development

The methodology used in the development of this project had different moments for clarifying and redefining the problems to solve, and the goals to achieve. These moments were, mainly, composed of information research and analysis, ideas discussion and evaluation, test and confirmation of its applicability followed by its validation. To, effectively, finish this tasks some project management tools were used.

These were very important moments for the partnership as it was possible, with the help of some SMEs and target users, to make decisions that guided, consistently, all the work.

All the methodology used was supported in a constructive process where all the results of the initiatives taken (we can refer the target public participation) were effective contributions to the development of all the products.

Involving the target public was done through the realization of traditional training in basic ICT knowledge. This training allowed us to realize the real difficulties of the target public when using ICT. This training was, also, very important for the development of the first version of our flyer. Two more training courses were done, "How to become a successful commercial" and "ICT for life". These two courses were done in e-learning and with different pedagogical methods, which allowed us to define the best learning and training method for both the companies and the people. These two courses were also important to validate what type of technique, regarding electronic learning, would suite people needs and, of course, companies needs.

Another important moment, in the development of the learning pathway, was the definition of the professional profiles that would guarantee a high level of employment in the region [9]. The definition of those profiles was done in strict collaboration between the potential beneficiaries- organizations and people - leading us to a group of essential training modules, more adapted to what the companies really needed. This result was very important; allowing us to simplify all the training developed.

As a way to validate all the work done defining this pathway - and to close the cycle - trainees were put, in some of the companies for a period of three months, working in real conditions. This way,

trainees could, in a practical manner, evaluate and apply all the knowledge obtained during the e-learning sessions.

5. Pedagogical Models

As mentioned before different pedagogical models were used during two of our on-line courses. We used linear and nonlinear models [15]. We also used different kind of collaboration and participation teaching techniques [16].

We found that linear models were easy to establish but they were not very effective in maintaining the students motivation. Thus, we introduced some changes to this model. In one of the tests, the trainer would be seated in a different classroom, and using the chat tool would try to evaluate how the trainees felt about all the learning process.

Nonlinear models were more effective, but with trainees that have more difficulties in language and interpretation results were not very satisfactory. So it was important to use a mix of both models.

It was also important to realize that keeping trainees' motivation in high standards was of extreme importance for the courses success. Another conclusion was the need to use working groups and to use, during the learning process, games that allowed students to solve problems, and, thus, obtain the necessary knowledge in a more flexible way.

6. Learning Model

As our main target public was a target group with a lot of difficulties, especially in what concerned the use and accessibility of the new training/ learning systems and tools supported by the new ICT, it was important to define a learning model that was able to keep their motivation in satisfactory levels.

It is important to mention that a person who does a learning pathway, which drives to a new professional profile, has to do a set of training modules that in a whole will be considered a training action.

Thus, thinking in our target public, and after having discussed the results of all the tests previously done, the partnership decided that the learning model should have the following characteristics: each training module should guarantee the acquisition of some abilities needed to the development of some task; each training module shouldn't correspond to more than 12 hours of trainee work, this is an important factor essentially related to people's motivation; all the content should be able to involve the participants, thus, the referred content should be interactive enough (too much interactive would arise new problems); all the training modules should have an initial and ending live session, the ending live session should be used to the evaluation of the trainees, this is important for the training recognition among the SMEs; all the sessions should be supported with working techniques (individual work, team work, ideas discussions), this would allow a higher participation and intervention of the trainees. Also, as a way to keep the group of users motivated, it was decided that a Tutor should have an active participation and all the language used should be as simple as possible.

For supporting these results, we defined a set of professional profiles and we offered to fifteen users the possibility of doing a complete learning pathway. Among those users we had employed and unemployed people. Almost 87% of them finished his/her learning pathway, and were able to candidate to a new job. From those, 50% were able to get a new job. These were very encouraging results.

7. Netstart Products

As mentioned before, NetStart Project has two distinct phases- they together realize the Personalized Itinerary through Technological Adaptation - and in each phase a set of tools and products. The following sections will describe each of its products and tools.

7.1 First Phase Products- Flyer and CD-Rom

The products that realize this phase are a flyer (Figure 2) and a CD-Rom (Figure 3). The flyer will give all the necessary directions, to someone without any computer skills knowledge, to start using a Personal Computer (PC) until the stage of inserting and start using the CD-Rom. All the language used

within the flyer and CD-Rom is very simple and easy to understand. This is a very important factor, as we are dealing with low qualification people. Thus, it was also decided that all the language in the development of the project would have a special attention, allowing more people to use all the project tools.

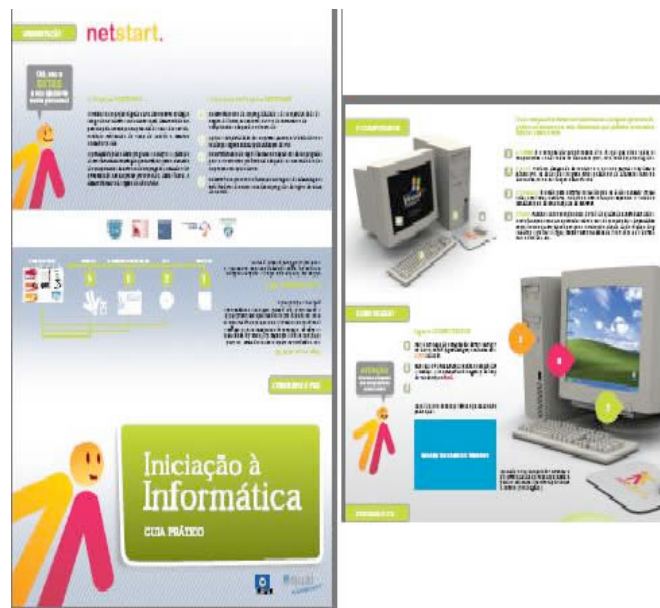


Figure 2. Flyer



Figure 3. NetStart CD-Rom

The CD-Rom consists of several games and tutorials that will allow the user to access, in an independent way, the second phase tool and the e-learning content. The CD-Rom is divided in four main subjects: Knowing better your PC (using the mouse and the keyboard, how to use programs/applications, etc.), the Internet (browser, hyperlinks, search engines), E-mail as an important communication tool (how to create an email account, how to use e-mail) and how to use NetStart (portal, tools and e-learning platform). All the tutorials in the CD-Rom are interactive and need the user to be a participant in them. This will allow the user to get all the necessary knowledge in a pleasant and simple manner.

7.2 Second Phase Product- Diagnostic platform

This phase is supported in a web based application. In this application, developed within the project partnership, the user, after an initial registration, selects the job functions were he, already, has abilities, then regarding those job functions he has to select what tasks/ roles has skills. Going on, the user has to tell the level of ability that he has for each task. For simplifying all the process it was previously defined three levels: simple, medium and advanced. Then, the user has to select how he will prove those levels. He can prove it with a document, for example with a certificate; his employer

can also prove its abilities levels and he can also ask for a diagnose test. The next step will make a match between the profiles and needs that are stored in the system and the information introduced by the user. A graphical representation is used, for a better reading and understanding, to show how approximate is the information introduced by the user to the profiles needed or stored in the system. For finishing all the process, the user selects a profile that satisfies his career goals and the system will return his Personalized Itinerary. The itinerary will inform the user what training he needs to entirely satisfy, considering as a starting point his actual abilities, that professional profile.

The web application stores all the information introduced by the users and keeps track of all changes occurred, and, as needed, users can access and update the information. The web application retrieves what activities - namely training courses, proof of task/roles levels - are done and what needed to be finished.

Employers or organizations managers can, also, use the web application to submit and/or introduce specific needs, and to manage the training needs within their organizations. The development of this web application was preceded by the definition of a functional analysis (Figure 4). For the development of this functional analysis was important the participation of the target people, the technicians and, also, the partnership. They together worked as a whole, satisfying all the requirements and defining a tool that can increase the competitiveness of our region. The functional analysis was supported in the work of [5,7,8].

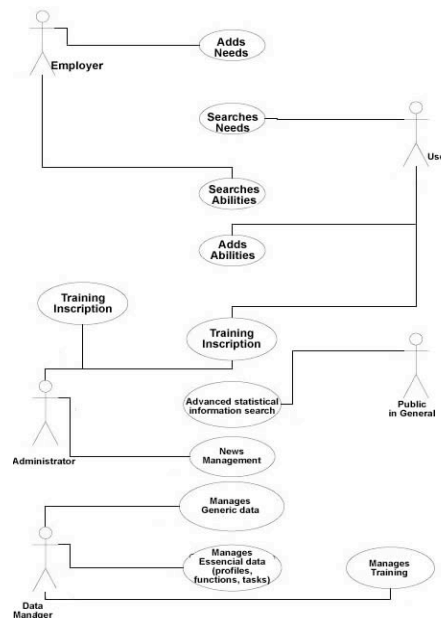


Figure 4. Functional analysis

When the user has his Personalized Itinerary, he can through the participation in online training courses reach the goals and abilities asked by the profile selected- this is the third phase. This phase only depends on the motivation and the needs of the user. It was privileged the e-learning system known as blended learning (b-learning), and it was also defined that all the evaluation would be done physically in a classroom. This is important for the credibility and recognition of the abilities among the employers. The training courses, if chosen by the user, can be done externally, even through traditional training system (physical classroom). After the completion of the courses the user will be able to update its itinerary. Such process allows the user to choose what best suits its interests and needs.

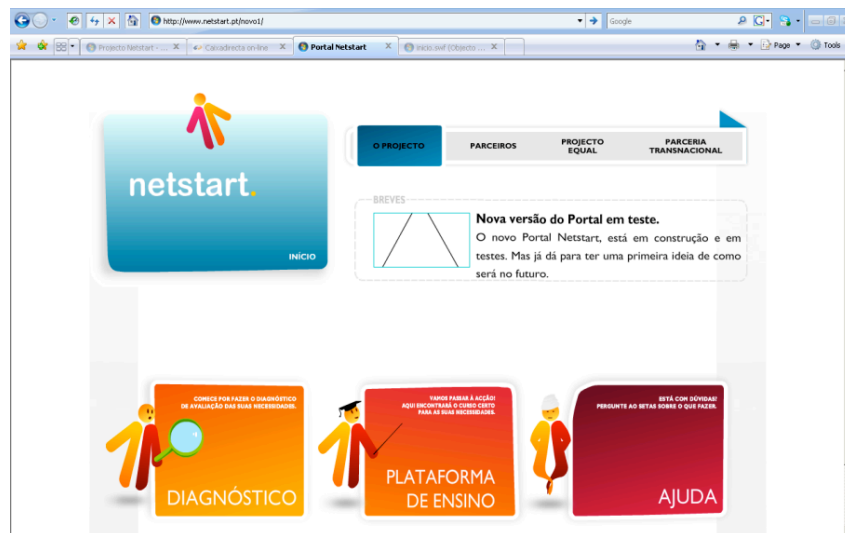


Figure 5. NetStart Portal

8. Conclusions

NetStart is a powerful mean of competitiveness improvement supported in abilities development and ICT. These together, surely, will make the difference and will start changing the training paradigm in our region and possibly in all European countries. Nowadays, the traditional training is used, the tools and results of the NetStart project firmly advise that it's time to move on and to assume that training can be more flexible and accessible. All these results will be in a web portal (www.netstart.pt – Figure 5); from here it will be possible to access the web application, the e-learning platform and also relevant information.

NetStart set of tools allow, also, people to increase their ICT abilities. These tools will permit an increase in ICT usage and, also, an efficient exploration of all the information and content created and delivered by those technologies.

NetStart web portal wants to be, to all people with low qualifications, an open door to the digital world. Its main development characteristics, such as ease of use and simple language, will allow a low qualification person to find their real needs in terms of professional competencies and, also, allows this same person to select and begin new training, supported in ICT, which will satisfy organizations real needs.

All the tests done allowed concluding that this model is effective. It is possible in a quick way the acquisition of the basic abilities to the development of a task/ function. This functionality facilitates not also employment but, and sometimes more important, the integration of any person in an organization or even in society.

Nevertheless, we have to evaluate the results of the project application in a more real scenario i.e. in presence of a higher number of SMEs and users. It is also necessary, after a period of further utilization, to make a comparative evaluation of the employability level in the region.

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