



LabTV - e-Learning WebTV for Textile Testing Laboratory

Progress Report

Public Part

Project information

Project acronym: LabTV
Project title: e-Learning WebTV for Textile Testing Laboratory
Project number: 504714-LLP-1-2009-1-PT-LEONARDO-LMP
Sub-programme or KA: Leonardo da Vinci Multilateral Projects -
Development of Innovation
Project website: <http://labtv.euproject.org> | www.textilelab.tv

Reporting period: From 01/01/2010
To 31/12/2010

Report version: 1
Date of preparation: 17-01-2011

Beneficiary organisation: CITEVE – TECHNOLOGICAL CENTRE FOR THE
TEXTILE AND CLOTHING INDUSTRIES OF
PORTUGAL

Project coordinator: Célia Rodrigues
Project coordinator organisation: CITEVE – TECHNOLOGICAL CENTRE FOR THE
TEXTILE AND CLOTHING INDUSTRIES OF
PORTUGAL
Project coordinator telephone number: +351 252300300
Project coordinator email address: Rua Fernando Mesquita, Quinta da Maia n.º 2785
4760-034 Vila Nova de Famalicão Portugal

This project has been funded with support from the European Commission.

This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

© 2009 Copyright Education, Audiovisual & Culture Executive Agency.
The document may be freely copied and distributed provided that no modifications are made, that the source is acknowledged and that this copyright notice is included.

Executive Summary

LabTV, a training TV in the internet

In the scope of the e-learning and knowledge activity related to the relevant technical contents' development to reply to the necessities of the textile and clothing industries it was created LabTV - e-learning WebTV for Textile Testing Laboratory an European project, funded by the European Commission, through the Education, Audiovisual and Culture Executive Agency (EACEA) through the Lifelong Learning Programme – Leonardo da Vinci: Multilateral for 2009 and 2011.

The Leonardo da Vinci projects focus upon learning, training, improvement in quality and innovation of teaching and professional training, and development of innovative systems based in ICT: contents, services, pedagogies and practices for lifelong learning.

The use of an e-Learning WebTV means the development of e-Learning and uses the most advanced multimedia tools with high-definition videos, practical laboratory tests, simulation, testing and evaluation of high-quality content that meets the needs of all trainees who need a complete training or skills updating in the field.

The development of the LabTV project involves the use of the most advanced multimedia tools, with high-definition videos, laboratorial practices, simulation, testing and evaluation which answers to all trainees' needs.

The available contents intend to promote a total interactivity in a real working environment, in a step by step perspective, where all trainees can see and hear the explanations, providing a comfortable and flexible training experience always at the rhythm of each one.

Training with LabTV, will be engaging and interactive, it will include standards and procedures supplied by the video, presentations, and instructions from live video, capture of screen, presentations, chat, notepad, message board, link library, e-mail, assessments and other knowledge resources. It will provide you a unique experience, impossible to achieve with the traditional system of learning in the classroom.

The e-Learning WebTV is an e-Learning Platform composed by high quality videos and contents, presentations, laboratory simulations, assessments and review quiz, extra courseware (additional documentation), among others. By making use of videos, apprenticeship becomes a more dynamic and involving process, improving performance in professional activities and increasing learning results.

This initiative aims to provide different stakeholder, creative and effective solutions to optimize knowledge, making it an organizational asset, including through:

- knowledge transfer to companies and agents by providing resources and tools in knowledge about the textile and clothing industry;
- Development of contents and applications aimed at improving processes and services.

Table of Contents

- 1. PROJECT OBJECTIVES 5
- 2. PROJECT APPROACH 7
- 3. PROJECT OUTCOMES & RESULTS 9
- 4. PARTNERSHIPS..... 10
- 5. PLANS FOR THE FUTURE 12
- 6. CONTRIBUTION TO EU POLICIES..... 14
- 7. EXTRA HEADING/SECTION 15

1. Project Objectives

One of the biggest challenges nowadays is to establish new forms of participation, achievement and development of people and organizations as well as learning and returning to individual ownership of the act of learning, allowing you to choose what to learn when and the way it most fits your style.

For such, has greatly contributed the recent and innovative way of organizing the training, called e-Learning - distance learning through Internet - which has proved efficient implementation in various public and in different areas.

Among other objectives, LabTV aims:

- support individual development, while ensuring that each person can learn on their own rhythm according to their availability and whenever it seems necessary;
- transfer knowledge to the textile and clothing industries, providing content permanently, so that they develop skills related to their products and services;
- constantly update programs distributed on the network, allowing them to customize different learning needs or multiple groups of people;
- develop links between the classroom training programs and distance learning programs, giving the whole a formative logic which fundamentally produce results.

The LabTV is a European project funded by the Leonardo Da Vinci Programme and has as specific objectives to:

- contribute to the increasing the skills of workers in textile and clothing industries, through training on textile tests according to the existing standards for quality control;
- provide the textile and clothing industries, and the textiles technicians in particular, with knowledge on standards and good practices in the textiles quality process control;
- allow that the textile and clothing companies in general and the technical staff in particular, have access to a set of tools that enable them to obtain information an/or skills;
- create conditions for an environment that values training through e-learning in companies from the textile and clothing;
- familiarize the workers, especially the least skilled, with resources for learning new information and communication technologies;
- make training more attractive through the use of non-traditional resources (using a computer);
- increase the skills of current employees, encouraging lifelong learning; contribute to increase equal opportunities in eLearning;
- support lifelong learning;
- diversify the learning methodologies;
- promote the trainers training, tutors and others involved in training an eLearning tool.

The main beneficiaries of this project are those involved with the textile and clothing industries, including businesses and employees, students and universities, institutions which promote research, machinery and chemicals, etc, in particular at the following points:

- in industrial companies through their workers training, contributing to a better quality control of textiles and to a consequent increase in competitiveness;

- universities and technological schools, because it is a program of skills development with obvious advantages in the students specialization;
- the machinery manufacturers and products, can contribute to a better understanding of quality control tests that are inherent in the textile process and thus the commercial level, can advise and/or provide technical support to its customers.

2. Project Approach

The human brain receives daily gigantic amounts of information through the senses, and it is through them that the human being learns to move, the equilibrium and to connect with the world around them. The brain organizes the information received and this process is called sensory integration. For years the human brain has been regarded as a computer and as such relies on information it receives from the environment through the senses, using different formats and resources, learners can receive different stimuli and guide the learning process according to the most indicated in each case. Today an ongoing challenge is to decrease the superfluous cognitive processing that can be caused by interactivity and to capitalize on the learner's motivation to engage in generative cognitive processing that can be fostered by interactivity. Multimodal learning environments make use of two different modes to represent the content knowledge, the verbal and the non-verbal. In a multimodal learning environment the learner is offered with a verbal representation of the content and an equivalent visual representation. Following our research on technology enhanced learning, we are facing the challenge to promote meaningful learning by increasing learner's active processing of the instructional contents while reducing cognitive load. Bransford et al. (1999) focused two significant features of new instructional technologies, visual and interactive styles of presentation. Regarding the new instructional technologies, they can help/enhance learner to better understand concepts that are difficult to comprehend.

LabTV addresses to a domain where the training offer is very reduced, either at national and international level. The use of virtual environments from the perspective of knowledge acquisition and application through self-learning is not widespread. This project represents an original contribute once this type of working tool is based in an interactive process using the information technologies. The main aim is to build an e-Learning WebTV that focused on the Quality Control in Textiles, using the most advanced multimedia tools with high-definition videos, practical laboratory tests, and evaluation among others. The contents available to learners provide a total interactivity in a real work environment with videos where the learner's can see and hear explanations, providing a comfortable and flexible training experience always at own rhythm.

The e-Learning WebTV will provide you a unique experience, impossible to achieve with the traditional system of learning in the classroom. The training with the e-Learning WebTV is engaging and interactive, includes instructions from live video, presentations, chat, notepad, link library, e-mail and assessments.

The constant development of the tools used is a continuous need and imperative for the educational success. Allow the joint construction of knowledge, so that the various actors can contribute jointly and that the user can also be author of the content and not just a passive receiver. Offer user-friendly interfaces, so the user can learn and exploit the resources offered by the tool, quickly and easily. The diversity of learning tools and resources that facilitate the construction of knowledge can be monitored and validated in a more close and effective way.

Sites like YouTube, Google Videos, Vimeo, Daily Motion and Soapbox, are the most recently phenomenon explored in the information dissemination in educational environment, because they provide learning spaces richer and further encouragement for learners to share ideas and experiences and also to develop their critical capacity by the created stimulus. Raising learning based in video, the textile tests are presented in high definition so that the quality and graphics definition of the same can constitute an added value in terms of knowledge and learning.

By making use of videos, the training/learning contents multi-sensory: we remember 50% of what we see and hear, compared to 10% of what we read becoming a more dynamic and involving process, improving performance in professional activities and increasing learning results. When professionals learn by seeing videos or listen podcasts, their comprehension and retention are superior to the usual learning practices.

Like other Web 2.0 capabilities, podcast, despite having its genesis in the radio environment is also revealed as an excellent educational resource and a gateway to interesting new technologies in education.

Web users have begun a process of producing and publishing online audio recordings, which won its largest dimension in the creation of web radio stations, but also has been used in other areas such as education and vocational training. This technology allows experimenting collaborative and cooperative work with pedagogical interest and innovative ideas to generate other forms of information. Podcast, despite having its origins in radio environments, it also reveals an excellent learning resource and a gateway to interesting new technologies in training. In LabTV you can download audio files previously saved with the full description of the various textile tests developed in the project.

The project is oriented, specifically, to companies' needs, supporting in the decision process during critical situations, in a cognitive and emotional plan. This project will promote training in areas that are as vital as specific to industries, supporting also the development and transfer of innovative ICT based contents, services, pedagogies and best practices.

3. Project Outcomes & Results

LabTV – e-Learning WebTV for Textile Testing Laboratory, represent an original contribute once this type of working tool is based in an interactive process using the information technologies. The use of e-Learning WebTV means the development of e-Learning and uses the most advanced multimedia tools with high-definition videos, practical laboratory tests and evaluation. The contents available for trainers provide a total interactivity in a real work environment with videos on the move which, step by step, the trainees can see and hear explanations, providing a comfortable and flexible training experience. The e-Learning WebTV will provide you a unique experience, impossible to achieve with the traditional system of learning in the classroom.

At the “System Specification” on the work-package 1, a wide range of activities will be performed, like the user’s style and rhythm of learning, needs, the most appropriate pedagogic methodology, as also a technical analysis to the system and the interface design. So during this work-package it will be made a Report on survey diagnoses of needs, rhythm & learning style, where it will be defined a Pedagogic Methodology for e-Learning WebTV, as also a Training Curriculum.

The work-package 2 “Instructional Design” aims for the pedagogic design and at the storyboard development, describing how the contents will be presented in terms of information and interactivity, according the various pedagogic approaches. The Report on Pedagogic Design will be the document that sum up all these processes.

“Development and Production” is the aim of the work-package 3, and it is where the partnership will create all the contents (videos, script, podcast, etc), characterizing the different chemical and physical tests made to textile products. All the learning resources will be made in four languages, English, Portuguese, Spanish and Lithuanian.

The work-package 4 “Piloting and Validation”, has as main activities the installation, the functional tests and their evaluation. Within this activity it is pretended to validate at European level with a report of the new learning solution, e-Learning WebTV.

The “Dissemination and Valorization Plan”, work-package 5, is where its defined the activities, which main objective is the transference – appropriation, valorization and incorporation – of the innovative solutions, rendered in a new product, developed and experimented in real environment. The dissemination of the project and its results will be made with the various means, although we want to point out the international workshop (1) that will be held in Portugal and the learning labs (3) which are held by the other partners in their native countries.

The work-package 6 - “Project Management” ensures an efficient management at both administrative and technical levels. The main tasks involve all the partners and its main purpose is to assure the quality of the work, and coordinate the scientific and technical elements, monitoring partner’s participation and fulfillment of the tasks, as assigned in the planning and according to the requirements. So during this work-package it will be developed a Quality Management Plan, the Interim and Final Reports, as also the Intellectual Property Rights and Exploitation Results Agreement.

4. Partnerships

The LabTV project as new paradigm for learning that are reformulating the roles of various players in training, such as trainers, trainees, content and training institutions. The pedagogical framework of this paradigm is based on the assumptions of the constructivist theory whose main features are learner-centered learning, for learners who are building their knowledge and control their own learning path.

The training dynamics in the eLearning context implies the involvement of a wide range of disciplines like: pedagogy, educational technology and communication media. It is common to find that the multimedia educational content is developed according to the educational methodology defined at the design stage, according to the technological options available and in accordance with the virtues of educational communication media.

To ensure quality, this cycle of creation, it is advisable to active intervention of a multidisciplinary team composed of various specialists, enabling better integration of all elements needed to develop products that meet the scientific requirements, educational, technological and social.

LabTV consortium is made up of five partners, three Research and Development Centre's and two Companies, combining skills in ICT development, in the definition of the chemical and physical testing of textile products, and in the contents that are being transfer to companies and end users.

CITEVE is the project coordinator, dealing with all management activities, keeping the communication lines between the several elements of the production team and to ensure that team members know what it is required, and what it should be provide to other members as well as helping to resolve conflicts.

The three R&D Centre's (CITEVE, LTI and CETEMMSA) are also responsible for the contents creation to include in the learning solution, being responsible for the task of compiling and evaluating training activities, taking into account the content and learning objectives to achieve with the multimedia product. CITEVE is the leader of the work-package responsible for the system specification. LTI is the responsible for the work-package dissemination and valorization plan. CETEMMSA have also large experience in training activities involving more than 3.000 trainees per year and they are the leader of the Piloting and Validation.

EMMERCE EEIG has strong knowledge and experience in the technical and pedagogical development, methodology, as well as introduction and application aspects of professional and lifelong learning using Internet and software-based solutions; so they are the responsible for the visual communication of the ideas contained in the product, usability, instructional design and human-computer interaction, which will determine the way users interact and communicate with the product (Instructional Design).

EDITAVE is a company with 18 years of experience as a solid and editorial reliable company, with multimedia dynamic, through Web TV, Radio Digitalfm and the newspaper. In the LabTV Project they are the leaders of the development of computer products and multimedia content, using programming languages and integrating them into a learning management system (work-package 3, Development and Production).

The establishment of a multidisciplinary team is fundamental for starting the project. The importance of a multidisciplinary intervention in the design, development, implementation and

monitoring/operation of the distance training is the diversity of skills involved in learning, particularly with regard to technological aspects, technical and pedagogical involved in it.

The content design involves knowledge of methodologies and techniques that require specialized professionals. Team to design and implement learning resources must be part of: experts from each of the scientific areas in question to ensure the quality of the content; experts in the technologies that, in each case are to be used, responsible for the "usability" and functionality of materials; professionals in charge of the artistic image and overall cognitive ergonomics of the materials; finally, experts in educational sciences, responsible for architecture and didactic materials, component of decisive importance, as is easily felt by the integration and quality of the final product.

5. Plans for the Future

Technology enhanced learning is gaining impulsion partially due to the demand for a decrease time-to-competency in the information and knowledge society, prompt by globalization and competition. Companies need to offer valuable training to employees ensuring that they acquire timely new competencies.

e-Learning have become one of the fastest growing trend, aiming to present an infrastructure which incorporate learning materials, tools, and services into a particular solution to produce and distribute training content promptly, efficiently, and cost-effectively.

Recent studies point out a significant difference in learners' motivation concerning attention between the video-based instruction and traditional text-based instruction. Learners report that the video-based instruction is more effectual than the traditional text-based instruction.

Both the sociocultural learning theorists Merriam and Caffarella (1999) and the constructivists Jonassen, Peck, and Wilson (1999) emphasize the importance of context-based learning using real world context for enhancing learning outcomes. Real world contexts where social relationships, tools, and engaged experiences are present can make better learning environments (Lave 1996).

Video is one of the richest resources that can be used in e-Learning, they can present information in a more attractive and consistent way. An important characteristic of video is the possibility to use auditory and visual symbol systems. Baggett (1984) and Kozma (1991) support that the information acquired visually is more effectual than using a single audio version. Video is a better approach for learning complex skills, because it can represent problems, equipment, and procedures that aren't easily verified (Anderson, Armbruster, and Roe 1989; Overbaugh 1995).

Recent technology advances have resulted in learning systems with powerful instructional video elements. Prior studies conclude that video-based instruction has not been effectively adequate, due to the learner's passivity in the learning process. Nevertheless, few initiatives on video-based instruction have engaged learners in an active learning process. With LabTV we aim also to explore the potential of video-based instruction to engage learners in dynamic, reliable, and collaborative learning.

The emergent of a non-linear and interactive video technology allows trainers to interact with instructional video, enhancing the learner engagement, and therefore improving the learning efficiency. A key media feature of the interactive video is the personalized access to the video content. The logic segmentation of the instructional video using conditionality is being performed. If the learner does not interact with the instructional video, it will stop.

The learner can perform interactive operations at any time by pressing the control buttons on the interface. For example, the learner can click the 'Info' button to access the current application method and learning outcome of the video. When the learner move the mouse over the 'Menu' button, a pull up menu display a hierarchical content index of the video.

LabTV is a multimedia-integrated e-learning system developed to increase the interactivity and engagement of learners. These system is being designed and implemented to offer an interactive and personalized online learning environment enabling self-paced, anywhere, just-in-time knowledge acquisition. In LabTV the trainer can watch an instructional video integrated with script contents, podcasts and instruct notes.

In the LabTV the video is delivered from a video streaming server, which means that the video is played as soon as a small portion is received by the client computer rather than after entire video is downloaded. A Web server, on which most of the information processing takes place, holds metadata of video and other instructional material. The metadata contains a variety of descriptive information about the video clips, such as title, learning outcomes, keywords, starting and ending time, among others.

6. Contribution to EU policies

LabTV contributes to the EU Policies mainly on the development support of innovative ICT-based content, services, pedagogies and practice for lifelong learning; supporting the participants in training and further training activities in the acquisition and the use of knowledge, skills and qualifications to facilitate personal development, employability and participation in the European labour market.

With this project we will also allow trainees to renew their competencies, increasing the possibilities of work market insertion. Students will also be a target, in order to increase their knowledge and acquire the multidisciplinary that work market requires. So, we will have a public with multiple responsibilities but which acknowledge the fact that it's necessary to gain skills in order to compete in a competitive work market.

This project will promote training in areas that are as vital as specific to textile and clothing industry, supporting also the improvement in quality and innovation in vocational education and training systems, institutions and practices. The available contents will provide a total interactivity in a real work environment, where the trainees can see and hear explanations step by step, providing a comfortable and flexible training experience.

The use of virtual environments from the perspective of knowledge acquisition and application through self-learning is not widespread, particularly in the countries participating at the proposal. This project represents an original contribute once this type of working tool is based in an interactive process using the information technologies.

With the use of e-Learning WebTV taking advantage of the most advanced multimedia tools with high-definition videos, practical laboratory tests, simulation, testing and evaluation of high-quality content that meets the needs of all trainees who need a complete training or retraining in the field, independently of their any form of discrimination.

This project aims to meet the guidelines of the Lisbon Strategy in 2010, regarding the use of e-learning as a tool for knowledge disseminating, creating opportunities for the disadvantaged workers use the power of technology to benefit of social and educational quality. As also addresses to more than one operational objective of the LLP, like for example: to improve the quality and to increase the volume of co-operation between institutions or organizations providing learning opportunities, enterprises, social partners and other relevant bodies throughout Europe; to facilitate the development of innovative practices in the field of vocational education and training other than at tertiary level, and their transfer.

7. Extra Heading/Section

Enter your text here

