



## VIRTUAL TRAINING IN VOCATIONAL EDUCATION: FOOTWEAR TRAINING

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### Abstract

This paper aims to promote a training tool developed under LdV programme in footwear training in English, Romanian, Turkish and Greek. The virtual training centre is a good example of the development of innovative practices in the field of vocational education and training, which is one of Leonardo da Vinci General Objectives. Virtual training centre for Shoe Design (VTC-Shoe) was developed in 2007-2009 within a Project proposed by a consortium consisting of three Balkan countries (<http://vtc.shoe-design.ro>). The partners are Gheorghe Asachi technical University (Romania), Selcuk University (Turkey) and Technical University of Crete (Greece).

**Key Words:** Development of innovation, footwear training, virtual training, distance education.

### INTRODUCTION

It is a fact in our age that knowledge is growing faster than ever before and educationists and employers spend a significant amount of time on continuing education programs for the students and employees. They feel that taking classes is not enough because the traditional ways are not able to keep up with a rapidly changing environment. Especially, with the spreading of information technology, network learning has become a reality, at least technically, and a vast amount of spontaneous knowledge exchange is taking place on the interactive World Wide Web. The widespread use of Information and Communication Technologies (ICT) in many fields of education, the Internet, mobile computing, social networks and many other advances in 21<sup>st</sup> century help essentially to promote and boost education as well as industry. Considering these changes in approach and methodology, EACEA (European Commission, Executive Agency Education Audiovisual & Culture) started Lifelong Learning Programme (LLP) as the flagship European Funding programme in the field of education and training. LLP enables individuals at all stages of their lives to pursue stimulating learning opportunities across Europe. Leonardo da Vinci, under LLP umbrella, focuses on vocational education and training, other than at tertiary level. It addresses both the learning and teaching needs in the sector, and is therefore aimed at all parties involved, namely trainees in vocational education, teachers and trainers, institutions and educational bodies, enterprises, associations, social partners and bodies relating to either lifelong learning or the labour market. The shift from teacher centred approach to learner centred one has modified and revolutionised the teaching and learning methods. Teaching and learning tools were nothing but a piece of chalk and a blackboard eraser, teachers and students who met each other face to face inside the classroom during class. Later, videotape programs were used as teaching aids. Then, one-way teaching by computer arrived. Finally, today's advanced computer and information network technology has revolutionized our teaching and learning methods. In accord with the development, learning environment has also changed. Students can listen to their teacher or trainers in distant classrooms through PC's and get a simultaneous view of their teachers and texts as well. They can ask questions and record the "class" for repeated viewing. Distance education allows not only a teacher but also a learner to overcome the boundaries of space and time. There is a challenge in defining the distance education as Shale (Shale, 1988, p. 25) remarked: "Distance education is beset with a remarkable paradox - it has asserted its existence, but it cannot define itself." Despite the debate about distance education, there is no doubt that distance education is different from other instructional approaches. Garrison and Shale



(1987, p. 10-11) defines distance education as an education type that offers a minimum set of criteria and allows more flexibility. They suggest that:

- distance education implies that the majority of educational communication between teacher and student occurs non contiguously
- distance education involves two-way communication between teacher and student for the purpose of facilitating and supporting the educational process
- distance education uses technology to mediate the necessary two-way communication.

When the sources about education are studied, it is clearly seen that efficient and effective utilization of modern information and communication technologies is possible through "distance education", which can be regarded as a solution for inequalities of opportunity, life-long education and taking advantage of learning technologies and individual learning (Kaya et al., 2004). The changeable and the rapid technological changes that educational organisations cannot follow have brought about the term "lifelong learning". In this century, the world has become interconnected and more complex and, thus, younger and older learners need to generate new ideas, new products within an innovative approach. According to Castells, the basic paradigm of the information age is networking and the space of flows which "reigns above the historically constructed space of places [...] In other words, flows become the units of work, decisions and output-control, instead of organisations" (quoted by Nyíri 2006). According to Siemens (2006) the key changes facing learners and organizations today include Societal changes, Technology, Globalization, Rapid pace of information development and Decentralization.

These learning environments are not so different from a teacher-guided class with discussions and tests as well (Şahin M., et al, 2007). In this context, behaviourism, cognitivism, and constructivism are the three broad learning theories most often utilized in the creation of instructional environments. However, some scholars in education claim that the learning theories such as behaviourism, cognitivism, and constructivism are to be out of date as they were developed in a time when technology did not have so much impact on learning. In 21st century, technology has reorganized how we live, how we communicate, and how we learn. Knowledge is growing so exponentially that in many fields the life of knowledge is now measured in months and years. In addition, employers require employees to be connected with other nodes capable of cooperatively finding solutions to particular problems. Rethinking learning is essential to prepare competitive employers in a competitive global workplace (Siemens, 2006).

Considering these changes in approach and methodology, EACEA (European Commission, Executive Agency Education Audiovisual & Culture) started Lifelong Learning Programme (LLP) as the flagship European Funding programme in the field of education and training. LLP enables individuals at all stages of their lives to pursue stimulating learning opportunities across Europe. It is an umbrella programme integrating various educational and training initiatives. Leonardo da Vinci, Under LLP umbrella, focuses on vocational education and training, other than at tertiary level. It addresses both the learning and teaching needs in the sector, and is therefore aimed at all parties involved, namely trainees in vocational education, teachers and trainers, institutions and educational bodies, enterprises, associations, social partners and bodies relating to either lifelong learning or the labour market (see [http://eacea.ec.europa.eu/llp/about\\_llp/about\\_llp\\_en.php](http://eacea.ec.europa.eu/llp/about_llp/about_llp_en.php) . One of Leonardo da Vinci General Objectives is to support 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. Another objective is to support improvements in quality and innovation in vocational education and training systems, institutions and practices. In addition, one of the Leonardo da Vinci Operational Objectives is to facilitate the development of innovative practices in the field of vocational education and training other than at tertiary level, and their transfer, including from one participating country to others. Another one is to support the development of innovative ICT-based content, services, pedagogies and practice for lifelong learning. All these objectives serve to improve the Quality of VET systems and practices, which is one of Leonardo da Vinci European Priorities (in the call for proposals 2007). All these factors contribute to "Learning to learn", which is one of Lisbon Key Competences. Furthermore, the European Centre for the Development of Vocational Training (Cedefop) is the European Union's reference centre for vocational education and training. This centre provides information on and analyses of vocational education

and training systems, policies, research and practice. According to Seyfried E., in the past two decades and in most Member States there has been a growing awareness of the importance of quality in vocational education and training (Seyfried E., 1998). Finally, a further focus of the work consisted of translating the three European policy priorities promoting employability of the workforce, access to training with particular emphasis on the most vulnerable groups, and the better matching of training demand and supply- into concrete and measurable objectives (Şahin M., et al, 2007). Improving the quality and effectiveness in a fast track world with greater demands than before in professions and skills is one of the concrete future strategic objectives in relation to education and training systems in the EU. This improvement covers the continuing education and training for teachers and trainers in terms of development of skills for the knowledge society, ensuring access to ICT for everyone, increasing recruitment to scientific and technical studies, and making the best use of resources (Mihai and Sahin 2009).

### VIRTUAL TRAINING CENTRE FOR SHOE DESIGN

Virtual training centre for Shoe Design (VTC-Shoe) was developed in 2007-2009 within a Project proposed by a consortium consisting of three Balkan countries (<http://vtc.shoe-design.ro>). The partners are Gheorghe Asachi technical University (Romania), Selcuk University (Turkey) and Technical University of Crete (Greece). The main reason for the VTC-Shoe project proposal comes up to the changing needs in training, in terms of both quantity and quality, designed for promoting competitiveness and employment on the European footwear industry. In order to foster use of Information and Communications Technologies (ICT) in their national footwear industry, the VTC-Shoe partners engage a common challenge to support quality improvements in vocational education and training systems, by focusing on the development of innovation and good practice. The aim of the project is to implement shoe design training content (at elementary and intermediate level) into a virtually designed and served training centre which is accessible over internet, e-learning will be realised as an innovation in this field.

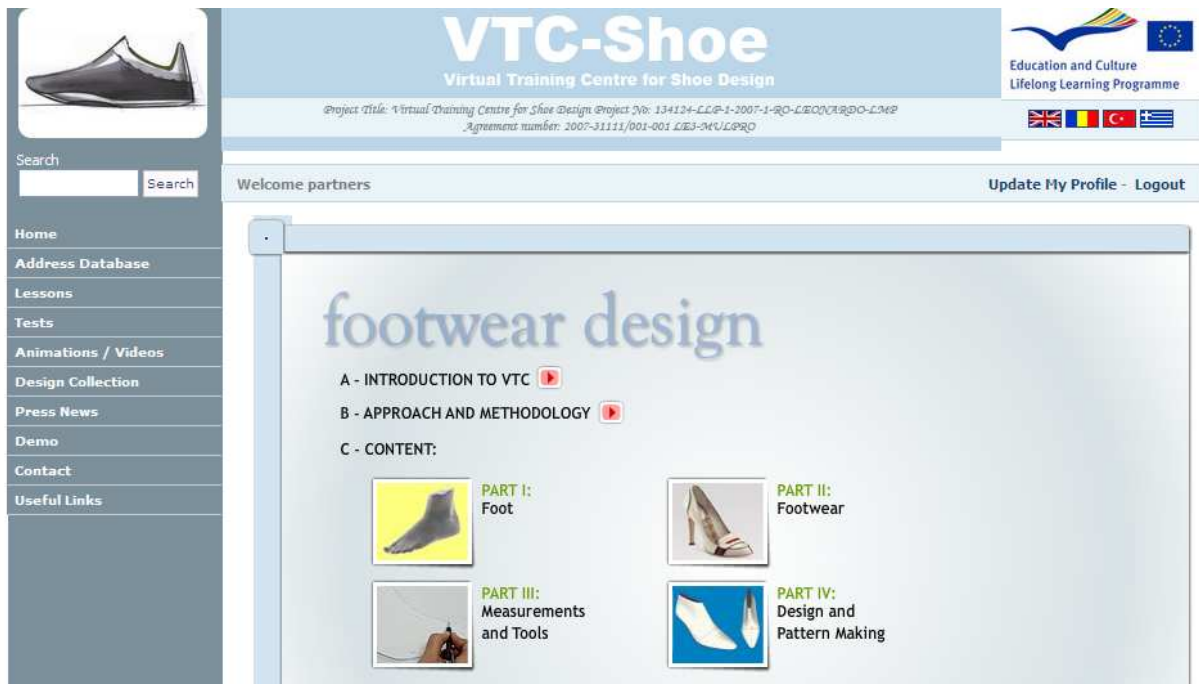


Welcome partners	
Title	Virtual Training Centre for Shoe Design
Acronym	VTC-Shoe
Duration	24 Months
Project no	134124-LLP-1-2007-1-RO-LEONARDO-LMP
Agreement no	2007-3111/001-001 LES-MULPRO

**Summary**  
The main reason for the VTC-Shoe project proposal comes up to the changing needs in training, in terms of both quantity and quality, designed for promoting competitiveness and employment on the European footwear industry. In order to foster use of information and communications Technologies in their national footwear industry, the VTC-Shoe partners engage a common challenge to support quality improvements in vocational education and training systems, by focusing on the development of innovation and good practice. The aim of the project is to implement shoe design training content (at elementary and intermediate level) into a virtually designed and served training centre which is accessible over internet, e-learning will be realised as an innovation in this field.

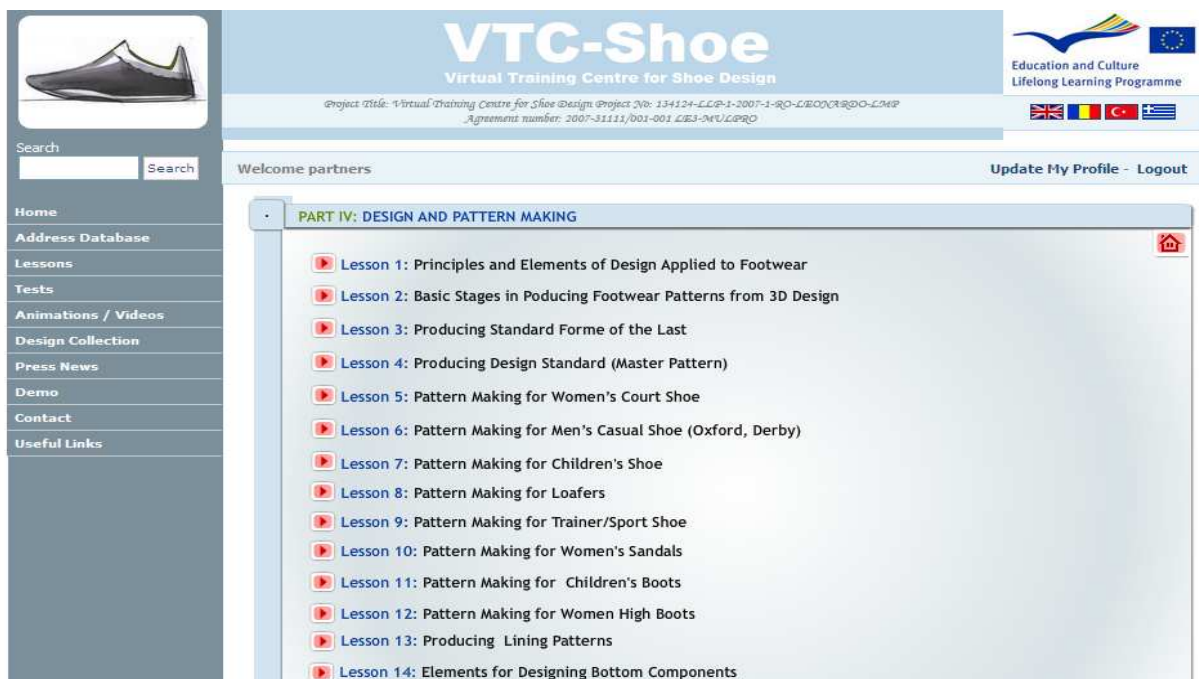
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The product was produced in English and then transformed into the native language of each partner. Each flag in this part represents the language version of the tool. The buttons of the content are for Address Database, which is the list of the addresses of the footwear related companies in each country. Lessons have been formed according to the common curriculum developed before the start of lessons. This section consists of four parts as well as the Introduction to VTC, Approach and Methodology used in the development of the content.



The screenshot shows the VTC-Shoe website home page. The header features the VTC-Shoe logo and the text 'Virtual Training Centre for Shoe Design'. Below the header, there is a search bar and a navigation menu on the left with options like Home, Address Database, Lessons, Tests, Animations / Videos, Design Collection, Press News, Demo, Contact, and Useful Links. The main content area displays 'footwear design' and lists three main sections: A - INTRODUCTION TO VTC, B - APPROACH AND METHODOLOGY, and C - CONTENT. Under C - CONTENT, there are four sub-sections: PART I: Foot, PART II: Footwear, PART III: Measurements and Tools, and PART IV: Design and Pattern Making, each with a corresponding image.

**Part I** covers the lessons related with foot focusing on the knowledge on foot anatomy and biomechanics applied to footwear design and pattern making. **Part II** is about footwear. It covers the lessons about materials used for footwear products, footwear structure, functions and classification criteria, lasts for footwear industry, footwear technology and technological allowances for pattern making. **Part III** consists of the lessons related with measurements and tools used in footwear design. The main topics are foot anthropometrics, measurement systems and tools for pattern making. **Part IV** covers the lessons related with design and pattern making:



The screenshot shows the VTC-Shoe website with the 'PART IV: DESIGN AND PATTERN MAKING' section selected. The main content area lists 14 lessons, each with a red play button icon. The lessons are: Lesson 1: Principles and Elements of Design Applied to Footwear; Lesson 2: Basic Stages in Producing Footwear Patterns from 3D Design; Lesson 3: Producing Standard Forme of the Last; Lesson 4: Producing Design Standard (Master Pattern); Lesson 5: Pattern Making for Women's Court Shoe; Lesson 6: Pattern Making for Men's Casual Shoe (Oxford, Derby); Lesson 7: Pattern Making for Children's Shoe; Lesson 8: Pattern Making for Loafers; Lesson 9: Pattern Making for Trainer/Sport Shoe; Lesson 10: Pattern Making for Women's Sandals; Lesson 11: Pattern Making for Children's Boots; Lesson 12: Pattern Making for Women High Boots; Lesson 13: Producing Lining Patterns; Lesson 14: Elements for Designing Bottom Components.

The button **Tests** includes the tests developed for the assessment of each lesson based on an interactive approach. Animations and Videos are the section that includes movies and animations classified according to



the lessons. Design Collection includes the designs made by the trainers and trainees. Press News is the section to serve the dissemination activities of the product through printed or visual media. The trainee can be in contact with the trainer or the product developer by using the contact form and can have access to useful links.

## CONCLUSION

The use of ICT in education and training in 21<sup>st</sup> century is regarded as an essential task of the educational organisations. The training tool, VTC-Shoe, is a perfect sample of ICT use in footwear training. VTC-Shoe is a multi-lingual virtual environment constructed in English, Romanian, Turkish and Greek. As a training tool, the curriculum is in accord with the approach, methodology and techniques required for virtual training. The audio and other visual aids contribute to its attractiveness for a trainee or trainer in this field. In addition, the animations, quizzes and design collection can further contribute this tool to become more attractive and effective in training. The VTC-Shoe can serve as a network of people who are engaged in footwear business and training. Thus, it can support the entrepreneurial community, including small and medium businesses, through collaboration and community support. Furthermore, it can support economic development by facilitating footwear design training that empowers socially and economically diverse people to strengthen and sustain growth opportunities in existing businesses or in the planning and marketing of a start-up business. With the construction, content, methodology and service to education, it can be regarded as an example of training tool displaying the use of ICT in a useful manner.

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