

Margaret C. Perivoliotis

Faculty of Graphic Arts and Design  
Technological Educational  
Institution (TEI) of Athens

Spyridonos Street, Egaleo, 12210 Athens, Greece

Corresponding address:

93 Agiou Meletiou, 11251, Athens, Greece

Phone: +30-18678277, +30-15385423, +30-945466507

Fax: +30-18678277

E-mail: perivoliotis@teiath.gr

# A European Module in the Textile Industry

## Abstract

*This paper presents the case study of the Technological Educational Institution of Athens, Greece, which is part of the four-year European Module in the textile/fashion industry among four European schools of design funded by the Socrates program. The unique feature of this project and its case studies is that it provides the opportunity for European researchers, teachers, students and designers to explore textile production issues from their home base, enabling the effective sourcing of textile information by strengthening the interface between education and research technology. The four schools have collaborated throughout the project, exchanging project briefs, learning source materials, and presenting key findings on their websites. The Greek case study focused on the local textile industry. We have ensured that our students not only understood the textile creative process, but also had a good understanding of the requirements needed to design a successful textile product, by studying the development of the local industry and services, as well as the characteristics of a successful textile company in a competitive environment. The final European dissemination was a chance to give students the opportunity to transfer knowledge and experience on textile issues from more industrialised to newly industrialised countries.*

**Key words:** *textile industry, fashion industry, textile research, European textile industry, Greek textile industry, textile databases, European Module, CRAFT project.*

## European Textile Industry

The textile and clothing industry is one of the world's most global industries, and constitutes an important source of income and employment for many EU countries. It is important to be aware of how the European textile and clothing industry operates, as well as its many complex structures and processes.

The textile industry is a multifaceted area requiring a deep understanding of design, management and technology. It plays a crucial role in creating innovative and attractive products of multiple uses for various users. It accounts for 5.7% of the production value of world manufacturing output, 8.3% of the value of manufactured goods traded in the world, and over 14% of world employment. In the EU in 1999, 120,000 textile and clothing companies employed over two million people, thus accounting for 7.6% of total employment of EU manufacturing industry. In terms of production and turnover, the sector's share was about 4% [2] (Table 1).

A recent survey of the textile/clothing industry in Europe by the European Commission illustrated the size and importance of the textile industry in the European economy and highlighted the challenge it faces. While the textile industry employed 1.35 million in the mid-90s, this workforce was reduced to fewer than 1,100,000 at the turn of the twenty-first century. Almost a quarter of the jobs in textile/clothing disappeared between 1990 and 1996, and this trend has been continuing since, albeit at a slower pace. It is estimated that 92,000 jobs were lost in 1999, but despite this,

the textile/clothing sector continues to employ two million people today, and remains an important source of jobs in the EU, especially for the female population. Exports accounting for 18.5% of the European textiles and clothing industry in 1999 are still essential for European producers.

The textile/clothing decline has mainly occurred in manufacturing sectors, as production has moved outside the EU (Table 1). The major retail networks are playing an increasingly important role in the textile/clothing sectors, particularly in textiles. With their large number of sales outlets (sometimes established in several countries), governed by a search for low production costs, they are tending to replace traditional manufacturers and to issue their own articles with their own logo, manufactured by subcontractors located outside of the EU. This is a signal for the future of the industry, with possible remedies coming from changes in the management culture and from seizing the opportunities presented by new electronically-based technologies. There may be significant increases in the numbers of people employed in positions such as managers, designers, technicians and administrators in sales and marketing. It is crucial to this development

that the need for mobility, flexibility and language competence of personnel in the European textile/clothing industry is fully recognised.

The EU industry is also exposed to competition from a large number of low-labour cost countries, especially in Asia. Despite the huge labour cost differences between those countries and Europe, the textile/clothing industry remains competitive due to higher productivity and the competitive strengths of innovation, quality, creativity, design and fashion. Structural changes facilitated by EU structural funds have been accompanied by the development of innovative products and processes, as well as electronic commerce, which is slowly making its entry in the supply and distribution chain. Additional problems the sector is suffering from include insufficient investment in research and innovation, and the difficulties of SMEs in entering the new economy. Better co-ordination is required in strengthening the effectiveness and the synergy of numerous activities in this area.

Employment and training have become priorities for the EU. They are characterised by the need to employ both low-skilled and high-skilled workers and

**Table 1.** *The data of the European Textile/Clothing Industry.*

Parameter	Assortment	1999	2000	2001	2002
Total employment (x 1,000)	Textiles	1,210	1,156	1,142	1,092
	Clothing	1,194	1,106	1,038	980
	Total Textiles/Clothing	2,404	2,262	2,180	2,072
Total number of firms including firms with less than 20 persons (x 1,000)	Textiles	76	75	72	70
	Clothing	125	120	113	107
	Total Textiles/Clothing	201	195	185	177

a high percentage (more than 70%) of women workers in clothing. Substantial progress has been made in the preparation of the enlargement of the EU to Central and Eastern European countries, and efforts are being made to strengthen the links between the EU and the south of the Mediterranean basin.

In the employment sector, an especially important issue for the EU is ethics. With the recognition of the textile/clothing industry as a driving force of growth, ethical values have an important place in the strategies of the major European firms. An increasing number of enterprises have been taking various initiatives to meet this social challenge. Heads of enterprises with a sense of social responsibility are endeavouring to improve the conditions of their employees through innovative personnel policies, social actions against exclusion, and the adoption of 'ethical codes' or 'codes of practice'. This process of adoptions and implementations constitutes the most tangible expression of the textile business world's growing sense of social responsibility.

On 28 May 1993, the European Apparel and Textile Organisation signed a charter of fundamental principles of global trade for textiles and apparel, the so-called 'Textile/Apparel Magna Carta', which has also been endorsed by non-EU employers' associations in Switzerland, Canada, Japan, Mexico, Jamaica and the United States. It established the principles of fair international textile trade based on fair practices, in line with the criteria of equity and reciprocity. It also included a commitment by the co-signatories to respect human rights at work, examining the problems of child labour in this sector, which have worsened not only in Third World countries, but in some European countries also [3-13].

The purpose of this study is not to analyse ethics in the context of the textile/clothing sector, but to highlight the increasing EU integration that began several decades ago, and to state that this was an additional parameter through all the case studies.

## ■ The European Module

### Introduction

The project introduces business cultures across the EU, and the intercultural teams that work in this environment. By researching and analysing aspects of the textile/fashion industry, it was anticipated that the participants would

have greater insights into a given country's infrastructure, and that they would be sure of getting the most out of their work experience opportunities. Within the project's activities, we had the opportunity to research and examine the size, distribution, and economic importance of the textile and clothing industries in the countries of the EU, with particular emphasis on the role of the SMEs in the Greek case study (Figure 1).

### The aims

The aims of the participants were as follows:

- to develop an awareness of the process and structure of the textile industry, and of how companies operate;
- to understand the new skills required by managers, designers and those with responsibilities in the textile industry;
- to create new opportunities, visions, skills, technologies, design directions and media;
- to extend knowledge of industrial textiles and business situations;
- to deepen understanding of the European textile/fashion industry amongst students on exchange programmes;
- to reach full- and part-time students who have been unable to benefit from exchange programmes.

### The participants

The four schools that participated in the European module were:

- the Kent Institute of Art and Design (KIAD), Rochester, UK (co-ordinator),
- the Fachhochschule für Technik und Wirtschaft (FHTW), Berlin, Germany,

- the Nuova Academia De Belle Arti, (NABA), Milan, Italy, and
- the Technological Educational Institution (TEI), Athens, Greece.

The features of the countries involved, based on the distinctive characteristics of the resources and production of the textile/fashion industry, are as follows:

The **UK's** strength in the textile/fashion industry lies in the areas of corporate communication and retail business. Design expertise is utilised to a great degree in the design and marketing of products. It combines a design-led approach with technology and varying inputs of management, business and cultural studies and language.

**Germany's** strength in the textile business comes from the country's ability to create economically profitable and reliable solutions, and to create intensive quality brands. There are two parallel courses in textile and clothing, both leading to the qualification of Diplom Ingenieur.

**Italy's** special strength is its creative power, its capacity to renew itself, to create new trends and durable styles, to reinforce existing ones and to spread them world-wide through publications and presentations, creating an image of high quality. There is strong emphasis on the development of design prototypes related to industrial requirements.

**Greece's** special strength is its location between East and West, Asia and Europe, geographically and culturally,

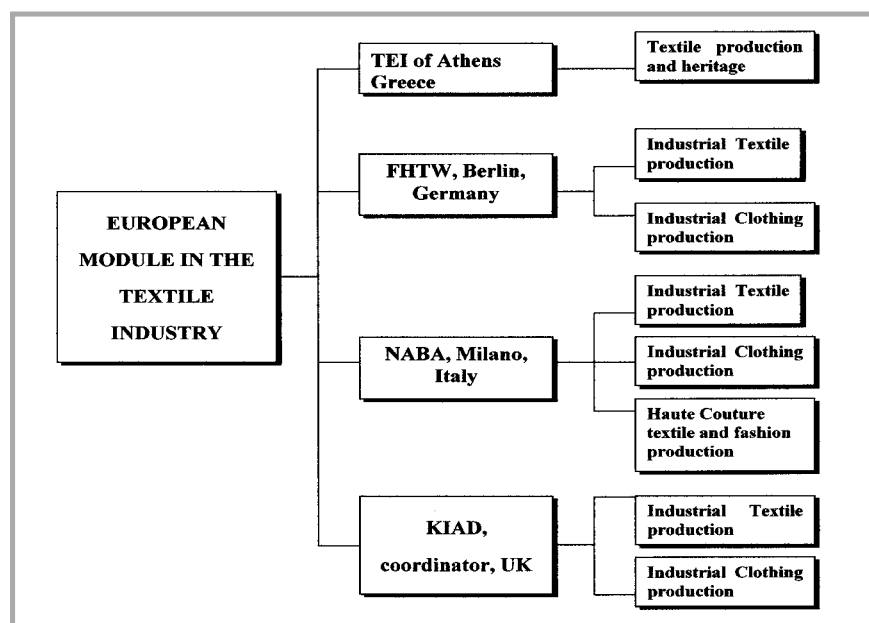


Figure 1. The structure of the European module.

its textile heritage, and its emphasis on traditional arts and craft textiles to a level that could even become an obstacle in a collaboration with more technologically developed countries. There is an equally strong emphasis on design, but in a more general sense, related to textiles. Textile production has not succeeded in taking advantage of these qualities, so we decided to focus our case study on improving this situation. This became a positive stimulus for the participants to examine the problem from a new point of view.

The major difference between the four partners was that while the other schools are textile/fashion schools, TEI is a design school with emphasis on textiles. Though this seemed a deficiency at first sight, it turned out to be a source for diversity of information on the European textile industry [14,15]. The European module provides an element of study which can be common across all the courses, and fill a gap in those areas where knowledge had previously been highly localised and individualised.

### The actions

All partners had to research and investigate one fashion/clothing company and produce a case study file. This file had to be constantly updated, to ensure that participants are studying the current practice of textile industry procedures.

The file was organised under the following headings and sections:

**Why has this company** been selected for analysis?

- Will it provide up-to-date information on textile industrial processes for educational purposes?
- Is the company willing to co-operate and participate in this project?
- Are there any confidential restrictions to publishing this information or using it for educational purposes?

**Who and where is this company?**

- What type of company?
- What is the size and organisational profile of the company?
- Who are the people involved in the company?
- Where is the company based?
- What is the size of its operation?
- Who does the company supply, sell, distribute to?

**What does the company produce?**

- What is the market level and position of the company, designer, mass market, niches?

- Outline the type of products the company produces (textile qualities, household, clothing, fashion, textile products, etc),
- How specialist and diverse is the product range?

**How does the company produce these products?**

- How are the products designed?
- How are the products developed for the pre-production stage?
- How are the products modified, altered and changed ready for the production stage of the process?
- How is quality controlled within the production system?
- What types of production systems are used?

**Commentary**

- Any comments that need to be added for educational purposes.
- Other activities of the company that need to be added.
- A summary and recommendations on how the company would participate in this project.

### ■ The Greek Case Study

The Greek case study focused on the textile industry and textile co-operatives for tourist purposes, due to their special local problems and importance for the Greek economy [1,16]. The actions taken during the four years of the European module were as follows:

**Two years** was allotted to research into the textile industry. The participating students had to select information on a textile company, handcraft producer or co-operative, and analyse it using the questionnaires provided, desk research, telephone interviews, field research through companies and trade organisations, and visits to companies and exhibitions. They outlined what references and information had been sourced (e.g. government agencies, the Internet, trade associations, publications etc.), and how the data had been organised and filed (e.g. photocopies from libraries, additional copies obtained from outside sources, from universities' files for student use, etc). During the project the students worked in pairs, so that they would maximise skills, provide support within the team, and have greater access to information for sharing. The methods by which this information was collated into a cohesive form for presentation were an important factor; they explored audio interviews, photographic images (either digital or

conventional), and power-point presentations [17-22].

**One year** was allotted for the completion of the case study. The case study was completed through the study of four environments related to the textile industry:

- the **textile industrial** environment, by researching and understanding the structure and operation of the local industry [17-22];
- the **market** environment, by researching and understanding the market, the competition and the customers [23-26];
- the **design** environment, by researching the infrastructure of design, the production process and the technology [27];
- the **production** environment, by researching how the production is carried out, how management is structured, and how the accounting is managed [28].

The students also had to produce a research file, based on an issue related to textile management.

**One year** was allotted to the preparation and completion of the final local and European dissemination, with a parallel application of the project in our local academic curricula during the fourth year, and an evaluation of the results of this application [29].

The European dissemination took place in Milan, the local dissemination in Salonica, northern Greece, where the majority of the Greek textile industries are located. The European dissemination was actually an opportunity to view the total work from textile/fashion schools across Europe, which participated in parallel work through the Socrates programme. The outcomes of the project were presented in mainland Europe as an ongoing initiative for understanding the textile industry. The total design research work is accessible on the Internet for the common use of all the institutions involve, at the following address: [www.madeineurope.org.uk](http://www.madeineurope.org.uk)

### Work methodology

For all the Greek participants, the research study took place in the Interior Design Faculty of the Technological Educational Institution (TEI) of Athens, at the Textile Design Workshop. The **Research Team** was composed of the staff members of the TEI's Textile Design Workshop and undergraduate students of the eighth semester. Students working on

the project were directed to the commercial and industrial chambers, affiliations and organisations of the co-operatives as documentation centres for publications on the textile industry.

We have selected information from all the Greek textile chambers and handicraft workshops of the Athens area, northern Greece, and provincial centres. Information was also provided by the Greek Organisation of Small and Medium Sized Enterprises. Questionnaires were developed for the interviews.

The following actions and teaching and learning strategies were used in relation to the project:

- the presentation of previous works via CD-ROMS, the Internet and hard copies,
- the provision of questionnaires for the interviews,
- the presentation of results and outcomes of the questionnaires provided to the students for research,
- an investigation and report on one company's profile,
- assessment strategies,
- the creation of a database on Greek textile companies, and
- presentation and evaluation of all the outcomes of the students' work.

In a parallel way, the activities undertaken by all the partners were as follows:

- meetings to discuss the project and outline the main activities,
- to produce a framework of tasks for each partner to undertake,
- to source and find information related to each country's industry ,
- to produce information files on general data regarding the textile/fashion industry of each country,
- to produce a case study on one company related to the textile/fashion industry of each country,
- to create a method of reporting on the progress of each partner's activities,
- to produce two questionnaires for each partner to provide written feedback on progress on the tasks undertaken,
- to produce two questionnaires for each partner to provide a written proposal for module implementations, and
- to produce a web site [30] that should illustrate:
  - the profile of all the partners,
  - information on the participating institutes,
  - the results from all the partners,
  - selected information concerning all the partners.

Students participating in the Greek case study were required to collect information on the production and marketing strategies of a textile company through personal research, interviews and research of literature. All students had access and opportunities to visit textile collections, workshops, businesses and co-operatives, in order to achieve the maximum information input [31]. The results were presented to the other students and included in our library, available to all.

We adapted the following methodology:

- the formation of a database on Greek textile industries, tourist textile producers and textile co-operatives production, management and marketing;
- an analysis of the textile co-operatives and tourist textile companies;
- interviews and questionnaires with all the above on production problems, sales, quality control, management and marketing.

Additionally, all the Greek participants were asked to design innovative textiles or textile products, for household use or fashion, and to propose one for production by the company or co-operative they had interviewed. We employed a data selection method by asking all participants to photograph or sketch all forms, designs and items that inspired them to visualise and possibly create new textiles for the specific companies. The final textiles

were selected from among hundreds of sketches created during the project. The participating students experimented with the creation of samples that covered a great range of adaptations, conducting parallel market research on their product's worthiness and commercial acceptability. The adapted textile design methodology, adapted by the participating students, and proposed to the collaborating co-operatives for their textile production is presented in Figure 2.

## ■ Results

The expected result of developing a European Module in the European textile/fashion industry is to adapt the educational process to the needs of the industry which have been identified as such. The outcomes indicate that strategic use of this educational process in textile businesses would significantly improve competitiveness, even though as yet few companies have employed the possibility. A trial of the teaching materials was anticipated with a small group of students, in order to gain feedback on their effectiveness. It has also been anticipated to establish and use open- and distance-learning methods among the partners, but this is still in the initial stages of development. The use of modern technology in the delivery of learning materials is still being explored and analysed for the most appropriate strategy.



*Figure 2. The adapted textile design methodology, adapted by the participating students, and proposed to the collaborating co-operatives for their textile production.*

Overall, this project has given us opportunities to explore joint curriculum strategies from four different perspectives. The project has required intensive planning and management, to ensure that the work be completed on time and to the necessary standards. One of the major challenges has been to devise effective means of communication between the project partners, to ensure that the work was ongoing and being completed by all. This has given the partners valuable experience in issues that need to be addressed to students during the application of the module.

The learning outcomes of the project were as follows:

- a growing understanding that research methods need complex referencing to find relevant information,
- a developing knowledge that textile/fashion development is multifaceted and operates on many different levels and across subject areas,
- understanding that well-planned utilisation of time and control of the management system is crucial to the outcome,
- the provision of learning materials concerning the size and geographic location of the textile industry in Europe, analyses of product types and of trade movements,
- the identification of sources of information concerning the textile industry in Europe (literature, data bases and organisations),
- analysis by country of business practices, the textile industry and the interactions of companies in the total supply chain,
- the provision of case study material for the student to develop an understanding of supply chain organisation and intercultural team building,
- factors affecting the demand for textiles, including the social and cultural background of their users as well as current trends,
- understanding that successful research happens when efficient synergies are in place,
- a developing knowledge that it is feasible to export textile projects and research works,
- a developing knowledge that it is feasible to create textile networks with themes of common interest that will share projects, innovation and co-operation among partners,
- a growing understanding that research is successful when interaction, multidisciplinary knowledge, and technological transfer are successfully

co-ordinated, and

- a growing understanding that participants from distant cultures and production systems can create innovation which does not neglect the hallmark of their local cultures.

During the academic years 1998-2002 (winter & spring semesters) thirty-six students of the sixth and eight semesters of the School of Graphic and Applied Arts, TEI of Athens, participated in the project. The outcomes of their projects were delivered in CD-ROMs and hard copies.

Approximately 500 full- and part-time students in each year across the ICP network have benefited from the study of this module. Approximately thirty full time teaching staff in each year have benefited either directly by helping to compile information, or indirectly by being able to use it for teaching purposes. Approximately 300 members of the Greek textile industry have required information on the data of the Greek case study.

A database was attached to the sites of all partners with information and links to the textile/fashion industry, textile/fashion design improvements, and the design possibilities that could emerge from it. This database remains a valuable tool for research, especially for educators and students from the countries involved. The development of the web sites was seen as both an experimental first step to a future establishment of distance-learning delivery, and as a means of attracting greater industrial involvement in the educational process. It opened opportunities and possibilities for people in industry who lack a wider knowledge of the European scene, while at the same time assisting them in bringing more up-to-date industrial knowledge and experience to bear on staff and students in the University environment.

### Editorial notes

1. Part of the research work was presented at the *Designing Designers 2002 conference*, Milan, and at the *Istanbul 2002 design conference*.
2. The Greek case study of the *European Module* was initiated by, and based on, TEI's research work for the *CRAFT European project*, as presented in 'Fibres and Textiles of Eastern Europe' vol. No 3(38)/2002, p. 8-13, 'Textile Production within a co-operative applied to rural European women' [1].

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31. *Textile Co-operatives: Within the research activities, ten textile co-operatives have participated which have also collaborated with the research team for the Leonardo Da Vinci Program CRAFT.*

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