



TEXTILE & CLOTHING KNOWLEDGE ALLIANCE



WP2

NEEDS AND CONSTRAINTS OF THE TEXTILE AND CLOTHING SECTOR

e-Report

ANTICIPATING SKILLS IN THE TEXTILE AND CLOTHING INDUSTRY

Abstract

ANTICIPATING SKILLS IN THE TEXTILE AND CLOTHING INDUSTRY

ABSTRACT

of the Report based on the results of the desk research conducted in
February - March 2015

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1. INTRODUCTION

1.1 Project context

The clothing and textile industries in the European Union are characterized by very intense international competition. EU producers face fierce competition from exports of new industrialized countries whose low wages and abrupt social charges give them a considerable competitive advantage in the production and logistics sectors. Any attempt made by the European textile and clothing sector to survive in such an international framework would demand a reform of the managerial and marketing mentality within the companies themselves, combined with a more thorough understanding of the processes and working of the international markets and their needs.

At the same time the financial crisis has severely affected European enterprises with the small and medium ones being more thoroughly affected. The enterprises' ability to seek funding through the national banking system has been compromised in several countries and opportunities for expansion present a disproportionate risk to most of them.

Changes in qualification requirements have also affected the growth of the textile and clothing sector stemming mainly from changes in lifestyle and a growing concern for environmental guidelines and sustainable solutions. These changes have not been met by corresponding changes in education and vocational training causing a lack in qualified staff especially in the management and strategic sectors.

The small and medium enterprises (SMEs) in the textile and clothing sector within the EU seem to lack the potential to reach the most promising international emerging markets, since they lack export oriented growth plans and a capability to create the conditions necessary for exports.

At the same time the general market stagnation within the European Union has affected innovation, mainly non-technological innovation, namely organizational, managerial and marketing methods. The cultivation of an innovative mentality is considered vital in any industrial sector and should be an integral part of management training. Despite this fact higher education in textiles and clothing has overseen such skill in their curricula.

Meanwhile developments in the understanding and recognition by the public of major environmental issues have made sustainability, sound environmental production and organization practices of utmost importance for all levels of production. Managers, more than ever in the

past, will have to focus on the energy efficiency and emission control as quality control will be more and more concentrated on environmental standards.

Essential managerial skills, like leadership, communication skills, collaboration skills, finance skills, project management skills and critical thinking will always be on the forefront of any vocational training.

The project's context is the creation of a framework that will anticipate necessary skills and result in better qualified professionals. The main aim is bridging the gap between education and production in order to foster stronger synergies between innovation, skills and jobs, within an adaptive, global context.

The most important factors contributing to the formation of this gap are the inadequacy of current educational processes and their detachment from production that lead to an inability to meet professional demands, especially in non-technical and strategic sectorial skills (mainly due to the fast and unprecedented changes within the EU and international market environments), combined with the almost total absence of professional and employer associations, with direct experience in the sector's necessities, in the validation and formation of educational curricula within higher education institutions.

The project's context is bringing all stakeholders within the textile and clothing sector to work together in the validation of educational programmes and vocational training courses to meet the changing demands of domestic, international and emerging markets, increasing the efficiency and competitiveness of EU textile and clothing small and medium enterprises.

Collaboration among professional associations, employers and higher education institutions in the formation of future courses is vital to the sector's survival and growth.

Aiming at the modernization of Europe's higher education systems and keeping in mind that the Textile and Clothing sector is dominated by SMEs the project mainly aims at:

- Enhancing innovation in higher education textile and clothing businesses, through the joint development of new, problem-based, learning and teaching methods centered on learners, and responses to challenges and problems affecting the sector. Emphasis will be given on export oriented management, non-technological innovation, marketing innovation, re-engineering of processes according to sustainability, CSR and Quality.

- Cultivating an entrepreneurial mind-set and skills in the new generation of textile and clothing managers, through innovative approaches to transversal skill learning throughout higher education programmes developed in cooperation with enterprises. Emphasis will be put on entrepreneurial skills, namely: leadership, risk-taking and creativity.

Considering the new demands and pressures the financial crisis puts on SMEs, the establishment of an ongoing, productive collaboration between education and production is of prime importance, guaranteeing the encouragement and establishment of strategic skills and initiatives taken through a visionary and educated assessment of risks, within the new emerging frameworks for production in the field.

The project's ultimate goal is the design, creation and administration of a Massive Open Online Course (MOOC) that will crystallize and reproduce the results of the research and collaboration between education and production.

1.2 Aims of the Report

In the context of the general project objectives, the objectives of the WP2 -**Needs and constrains of the Textile and Clothing sector**-are to assess the needs of European SMEs in the textile and clothing sector, focusing on growth, innovation and sustainability. This phase supports the exchange of good practices, mutual learning and the development of joint results amongst stakeholders in the partner countries.

The present report "Anticipating skills in the textile and clothing industry" represents one of the outcomes of the WP2 that, by its results, will be the basis for reaching the following project specific objectives:

- Development of sectoral methods for anticipation of high skills needs;
- Identification of the new skills for Future Textile and clothing Managers
- Design and implementation of specific initiatives that stimulate employers to co-invest and participate in the activities of higher education institutions, research and business centres to address new skills requirements;
- Development of a new flexible, innovative learning approach and delivery method for the textile and clothing sector, taking into account barriers existing among HEIs and SMEs, micro enterprises and based on experiential learning / real-life situations.

1.3 Methodological aspects

The methodology employed in the task of anticipating skills needs for the new managers in textile and clothing SMEs was based on qualitative research employing qualitative methods.

At this stage of the project, the main qualitative methodological approach used in skills anticipation consisted in secondary research through secondary data collection. This has involved the summary, collation and synthesis of the existing research publications and reports, as: sectoral reports, communications and studies at international, European, national and local levels, statistical data, publications (textbooks, articles, white papers), case studies, good practices etc.

The desk research focused mainly on a qualitative analysis of the Textile and Clothing sector, recording trends and aspects of the industry within an 8 year framework. Statistical data have been drawn from reliable sources before being consolidated and cross referenced with national and international reports focusing on drivers of change and anticipated skill needs within the sector.

The partners have searched for information collecting data using existing resources at organizational, national, European and worldwide levels, such as: Web resources; Articles (or other publications); Textbooks; Documents from the Government and relevant National Authorities, universities and research organizations, other industrial sources.

All partners have covered their national sources. The International/European sources have been distributed among partners. A database with contact details of stakeholders and target groups has been formed, for use within the framework of several work packages: WP2, WP3, WP5, WP6 and WP7.

The desk research has focused on a qualitative, as well as quantitative (wherever trustworthy statistical data have been located) analysis and description of the following aspects of the industry:

- analysis of the current situation in the partner countries (or/and in the neighboring regions) of the Textile and Clothing sector;
- analysis of the new skills for the future Textile and Clothing sector based on the European sectoral reports (including partners' countries);
- synthetic information on sectoral observatories / associations, research centres and HEIs at different national levels and at European level monitoring sectoral skills development and anticipating skills needs;
- analysis of the specific existing initiatives that stimulate employers to co-invest and participate in the activities of higher education institutions, research and business centres to address new skills requirements;

- analysis on trends and approaches for building effective and engaging MOOCs as a new flexible, innovative learning approach and delivery method for the textile and clothing sector, taking into account barriers existing among HEIs and SMEs and micro enterprises, and based on experiential learning / real-life situations;
- contact databases (with national bodies/authorities, universities, RTOs (Research Technical Organizations), VET schools and centres, professional organizations/ associations, other relevant educational institutions, and enterprises).

To elaborate this report and accomplish its aims, the required information and analysis are based on the work of all partners who have followed the methodological guidelines agreed in January 2015 for the desk research, accomplishing the following distributed tasks:

- Overview of the national textile and clothing sector (partners involved: P10-responsible, P2, P5, P6, P8, P11, P12, P13, P14);
- Literature review aiming at new skills needed in the textile and clothing sector (partners involved: all, P9-responsible);
- Main European sectoral reports on new skills for the future textile and clothing sector (partners involved: P2-responsible, P4, P13);
- Main international sectoral observatories / associations, research centres, HEIs at different national level and at European level monitoring sectoral skills development and anticipating skills needs (partners involved: P5-responsible, P2, P3, P6, P9, P11, P12, P13, P14);
- Main evidence based advantages for SMEs to co-invest and participate in the activities of HEIs, research and business centres to address new skills requirements (P3-responsible, P4, P7);
- Trends and approaches for building effective and engaging MOOCs supporting a more active involvement in their education as well as decentralized, self-directed and efficient experiential learning more independently in time and space (partners involved: P1-responsible, P9, P14).

1.4 Partnership

Partner Number	Organization name
P1	Link Campus University
P2	Universiteit Gent/ Department of Textiles
P3	Material Connexion Italia Srl
P4	Associació Agrupació d'Empreses Innovadores Tèxtils
P5	Universitat Politècnica de Catalunya
P6	Technological Education Institute of Piraeus
P7	A Fotopoulou GLP
P8	Creative Thinking Development
P9	"Gheorghe Asachi" Technical University of Iasi
P10	Asociatia Absolventilor Facultatii de Textile-Pielarie din Iasi
P11	University of Ljubljana
P12	Fundacja Rozwoju Przedsiębiorczosci
P13	CIAPE - Centro Italiano per l'Apprendimento Permanente
P14	Maison de la Promotion Sociale

2. SUMMARY

The report “**Anticipating skills in the Textile and Clothing sector**” has been made within the framework of the project “Future textile and clothing managers for export, marketing, innovation, sustainability and entrepreneurship oriented companies - TECLO”, as a deliverable of the WP2 - “Needs and constraints of the Textile and Clothing sector”.

This report draws the key findings of the planned desk research, gathering information from different available sources to accomplish the defined tasks, and highlights major conclusions in order to describe the situation of the textile and clothing industry, the new skills needs in the sector and the support needed by the SMEs that will be given by the project outcomes.

The main aspects included in the report can be summarized as follows:

- A short overview of the Textile and Clothing sector in Europe;
- References to main sectoral observatories/ associations, research centres and HEIs at different national levels and at European level;
- A description of the new skills needed by Future Textile and clothing Managers;
- Main European sectoral reports on the new skills for the future Textile and Clothing sector;
- Main evidence based advantages deriving from co-investing and sharing amongst companies, higher education institutions, research and business centres to address new skills requirements;
- Trends and approaches for developing new flexible, innovative learning methods based on using ICT that can be applied in the textile and clothing HEI sector;
- A general and documented view on the potential benefits of using MOOCs as new flexible, innovative learning approach and delivery method;
- The methodology and tools needed for the field survey in order to identify, respectively, main needs and kind of support needed by the textile and clothing SMEs in order to become “efficient and innovative”, main advantages of teaching transversal skills, via MOOCs.

2.1 Introduction

The **introductory** part of the report presents the general context of the project and its goals, pointing out the need of the creation of a framework that will anticipate necessary skills and result in better qualified professionals and that requires to bring all stakeholders within the textile and clothing sector to work together in the validation of educational programmes and vocational training courses to meet the changing demands of domestic, international and emerging markets, increasing the efficiency and competitiveness of EU textile and clothing small and medium enterprises. Also, the aims of the WP2 – “Needs and constraints of the textile and clothing sector” are highlighted which includes, as one of its outcomes, the present report “Anticipating skills in the textile and clothing industry” that, by its results, will be the basis for reaching certain project objectives.

2.2 Overview of the Textile and Clothing Sector

The purpose of the **second chapter** is to provide an analysis of the T&C sector, reporting on the performance of its sub-sectors and identifying opportunities the sector affords. Statistical data have been drawn from reliable sources before being consolidated and cross referenced with national and international reports focusing on drivers of change and anticipated skill needs within the sector.

Within the European Textile and Clothing industry five key drivers of change have been identified and described: industrial and consumer markets, globalization, knowledge and technology, policy and regulation as well as the financial crisis. The main findings on trends and drivers of changes point out the demands, industrial strategies, technology and financial and human resources.

This chapter also includes the results of the desk research referring to the identification of relevant entities which monitor sectoral skills development and anticipate skills needs: national bodies/authorities, agencies, universities, research institutions, professional organizations/associations, enterprises, other relevant stakeholders etc., at different national levels and at European level.

The presented results constitute a database in the form of the References to main sectoral observatories, associations, research centres and HEIs at different national levels and at the European level and a list of contact persons per country. The database contains a variety of stakeholders in the sector of Textiles and Clothing, including universities with textile and clothing

study programmes, research centres in the textile and clothing field, governmental bodies, national/ local agencies, committees, enterprises from the textile and clothing sector, NGOs.

2.3. Anticipated Trends on New Skills for the Future Textile and Clothing Sector

As other manufacturing sectors, the T&C sector is very sensitive to challenges represented by internationalization, globalization and emerging markets. Internationalization is necessary for growth, but it is also assumed that the company should remain strong on the domestic market¹. In order to meet the consumers' demand for "ethical" and "environmental friendly" products, the EU companies are more and more interested to invest in their corporate responsibility and sustainability. Also, the T&C sector is required to go forward by adding higher value in terms of innovative products, technologies and processes. For example, many EU companies have moved their awareness into higher value technical markets, such as the one of technical textiles. At the same time, the sector needs to keep its traditional advantages that come from fashion and brands, creative designs, new business models and good practices. All these challenges require highly qualified and multi-skilled employees.

In accordance with the opinion of the European Economic and Social Committee², the growth of the T&C sector should be SMART through creativity, innovation and internationalization. Also, it should be INCLUSIVE, through development of customized products. At the same time, the growth of the sector has to be SUSTAINABLE, through the development of eco-friendly products.

Skills needed by jobs in the EU textile and clothing industry have greatly evolved and according to the European Commission³ will continue to evolve rapidly from 2013 to 2025. Specifically, according to their report, in terms of specific skills needed by the EU textile and clothing sector based on where the sector might progress towards 2020:

1. Technical production competences will remain central to recruitment with increased focus on the demand for versatile staff that can operate across different workstations.
2. Supply chain management, business, sales and marketing skills (including the skills in international trade) are growing in importance. For many EU textile and clothing companies, "trade has taken the place of production".
3. The EU textile and clothing industry is further expecting skills on technology, innovation and sustainability. Leading technology-led areas include mass customization, 3D body

¹Support and Training Needs Among Swedish Fashion Companies, The Swedish School of Textiles, University of Borås, 2012

²Opinion of the European Economic and Social Committee on "Growth Driver Technical Textiles", 2013

³Annual Report (2012). European Skills Council -- Textile, Clothing and Leather

measurement, advanced CAD and e-Commerce technologies, internet infrastructures for custom-tailored clothing and business-to-consumer e-Commerce among retailers.

The evolving conditions will demand from companies in the sector to successfully overcome a restructuring process and often change their business model.

The main goal of the Report lies in the **anticipation of new skills for the future textile and clothing sector**, as the labour market in this sector and the skills people need, are evolving faster and future jobs require different mix of skills, competences and qualifications. In this context, it will be increasingly necessary for managers from T&C SMEs to acquire diversified transversal key competences and to develop new skills to be able to adapt to a variety of tasks.

The information about this topic, included in **Chapter 3** of the Report, was achieved through the desk research that includes literature review and analysis of European sectoral reports on the new skills for the future textile and clothing sector.

The literature review on the new skills needed in the future textile and clothing sector, points out the need of restructuring the processes and changing the business model of T&C companies as well as the key drivers of new skills demand in the sector.

The managerial skills are increasingly becoming a basic need in the T&C industry. There is a great demand for employees having a blend of technical and management skills, completed with soft and transversal skills, (e.g. communication and interpersonal skills), especially entrepreneurship. As many economic projections point out that the demand in emerging markets is growing, the T&C industry should orient its strategy for export to those markets and this will require, from the new managers, a combination of branding, marketing and distribution skills. Innovation has been identified as a key area for resistance and growth for the textile and clothing sector.

Innovation in T&C firms is not just about developing and applying new technologies, but also to successfully transfer new ideas and new business opportunities into market success and to re-organise business routines, external relations and marketing. In most companies which are successful in textile innovation, the management has mastered the skills of mass customization, project management, management of IPR and of relations with research centres.

In the face of intense global competition, European companies are increasingly turning to research and innovation to ensure sustainable competitiveness. In this process the scope of application of fibre and textile-based materials and technologies continues to be broadened. In many large end markets such as transport, construction, energy, healthcare or the environment, textile solutions

increasingly replace traditional materials and technologies based on their unique performance and sustainability characteristics. These are in addition to the large and attractive markets of fashion and interior design which offer interesting growth potential for European companies in their home market and worldwide due to superior creativity, quality, sustainability or new business models such as mass customization.

2.4 Main evidence based advantages for SMEs to co-invest and participate in the activities of HEIs

In this chapter, the report presents different types of university and industry collaboration that already exist, with an analysis on those considered most strategic to the execution of the TECLO project. Furthermore, advantages but also obstacles of such collaborations are underlined and the barriers that prohibit a better collaboration are analyzed.

The aim of this task is to identify the advantages that stimulate employers to co-invest and participate in the activities of higher education institutions, research and business centres to address new skills requirements. The results of the research will provide EU textile and clothing SMEs, employers' associations and trade unions with a motivational tool (Decalogue) for a higher implication in the future textile education, acting as partners with HEIs, in the definition and validation of curricula, attuning curricula to current and emerging labor market needs, removing the boundaries between technical, design, commercial and social skills disciplines, and providing the 'soft skills' for process innovation which are especially important to micro, small and medium-sized firms trying to close the productivity gap.

The desk report on the topic should reflect the outcomes of university-industry links that can be measured, the existing policies towards university-industry links aiming to maximize the knowledge transfer and learning potential, in order to overcome the knowledge gaps, to stimulate entrepreneurial mindsets among students etc. Particular barriers and possible incentives that could motivate SMEs networking with HEIs to close the productivity gap should also be pointed out in the report.

The literaturereview on this topic underlines the advantages of a strong relationship between Industry and HEIs, emphasizing the forms of collaboration and their effectiveness and the opportunities for the SMEs and HEIs to work together on quantifiable benefits for both parties.

The main advantages of a partnership between companies, HEIs and research centres lie in *innovation and transfer of knowledge*.

Many authors (Perkmann, 2007, Bonaccorsi and Piccaluga, 1994, Blumenthal et al., 1996, Webster, 1994, Urayaa, 2010 and Etzkowitz, 2008) emphasize the new role of HEIs, their influence in the economy and society, the need for a pro-active approach and for strategic thinking when drawing the long-term plans. HEIs evolve from the basic functions of teaching and research to a third one, commercialization where the partnership with the companies is the most important element.

The number of research partnerships between corporations, research centres and HEIs has increased dramatically over the past 20 years. A great influence has been the companies' need to remain competitive by outsourcing specific research projects to HEIs and research centres. To remain competitive in the global economy, it is imperative that corporations accelerate their innovation process.

The collected good practices and best studies were concentrated into a set of fifteen examples that show an already existing collaboration between HEIs and SMEs and their objectives.

Universities can be major resources in a company's innovation strategy and Companies can be a source of applied research and tangible results for the University. The key word of the collaboration is the kind of knowledge derived from such collaboration and how each partner can contribute and enhance the other one's performance and results.

Conforming the educational programmes to SMEs' needs refers to each type of cooperation. Specifically lifelong learning can be provided by HEIs, but this type of cooperation must take a form that fits SMEs needs. The form that the educating programmes will have, must overcome the barriers that SMEs face, such as lack of time. For example, the training programmes can take a form of training performed inside the organization but through outside trainers or even e-learning.

2.5 Trends and approach for building effective and engaging MOOCs

The future scenario for textiles and clothing will put the most stress on managers of small textile and clothing companies, requiring new specific skills from them. Emerging competences of higher skilled jobs mostly refer to how to implement export oriented strategies, non-technological and marketing innovation, re-engineering of processes according to sustainability, CSR and Quality, and – most importantly - entrepreneurship in order to adapt to changing environments in addition to a high quality education.

A new European innovative approach for textile and clothing managers is needed, making them able to constantly acquire up-to-date high skills needed to (1) Implement export oriented

strategies; (2) Implement non-technological and marketing innovation; (3) Re-engineer processes according to sustainability, Corporate Social Responsibility (CSR) and Quality; (4) Pursue change and efficiency through innovative entrepreneurship skills.

In the last decade, one of the most prominent developments in education are represented by the deployment of massive open online courses (MOOCs). In this context, the aim of this report is to provide a general and documented view on the potential benefits of using MOOCs as new flexible, innovative learning approach and delivery method.

Prior to building an effective and engaging MOOC as a new model of training provision for the textile and clothing HEIs, based on experiential learning / real-life situations in which students take a more active involvement in their education taking into account the barriers existing among SMEs and micro enterprises, a strong documentation on the subject is required.

The Desk research of trends and approaches for building an effective and engaging MOOC aims at bringing the arguments and solutions for the production of a flexible ICT tool addressed to Textile and clothing future Managers, offering contents in a very practical and job-oriented form, with a strong use of simulation and real-life situation.

Open education brings new opportunities for innovation in higher education that will allow institutions and academics to explore new online learning models and innovative practices in teaching and learning. Therefore, one of the main activities planned within the framework of the TECLO project was the desk research on the trends and approaches for building effective and engaging MOOCs.

The collected information was organized in several sections included in **Chapter 5** of the report:

- Literature review on MOOCs that includes a historical approach to MOOCs, the state of the art for the present including MOOCs' taxonomy, the list of the main platforms that are used to distribute MOOCs and different profiles of MOOCs' participants.
- Case studies on using MOOCs pointing out the general characteristics of the courses of each course type in order to define the factors that make MOOCs attractive but also engaging. The main aim is an analysis of the course structure and organization of the curriculum in the various types.
- Database on MOOCs with a general vocational training aim. The effectiveness of MOOCs (as supported by available attendance statistics) is evaluated. Testing and certifying methods are examined as trends show that most MOOC attendants do not seek to pursue a certificate, just browsing the course as "ghost attendants".

- Learning methodologies that can be implemented within MOOCs. Gamification and game-based learning are taken into consideration, as well as the goal of transferring the benefits of gamification and game-based learning to MOOCs.
- The last section of the chapter contains final indications that must be kept in mind when planning to create a MOOC. A list of choices that must be made is reported to be used as a checklist, together with an infographic summarizing MOOCs' principal issues.

2.6 Field Research – Planning and Methodology

The final Chapter of the report deals with the methodology and tools for the planned field survey that will lead to the competence mapping and designing of the matrices of new skills to be acquired by the new managers. These will lie at the basis of setting-up the EU curricula for the new professional profile of the TECLOM, endowed with more advanced entrepreneurial and managerial skills. The tools designed for performing the field research are represented by the questionnaires for sectoral SMEs and HEIs in order to identify, respectively, main needs and kind of support needed by SMEs in order to become “efficient and innovative” and main advantages of teaching transversal skills, especially entrepreneurship, via MOOCs.

The aims of the field research are to provide crucial information about:

- Main problems faced by T&C micro- and SMEs in: (1) Implementing export oriented strategies; (2) Implementing non-technological and marketing innovation; (3) Re-engineering processes according to sustainability, CSR and Quality; (4) Pursuing change and efficiency through innovative entrepreneurship skills; as well as main support needed;
- Main barriers/incentives met by textile and clothing HEIs in introducing innovative MOOCs;
- Main evidence based advantages of teaching transversal skills, especially entrepreneurship.

Special focus will be given to the subjects and challenges deemed critical for the European T&C sector:

- Importance of **export oriented strategies**, requiring a combination of *branding, marketing and distribution skills* from managers, but also the capabilities to create conditions for exports, such as *protection of IPR*, access to export credit and to financial instruments enabling to industrialize and commercialize the fruits of innovation.
- Extension of the concept of innovation from technological to **non-technological innovation** by introducing new organizational and marketing methods. This requires *good communication* with final consumers and better knowledge of issues related to *marketing innovation* (product placement, product promotion and pricing) and skills of mass *customization, project management* and *management of IPR* and of relations with research centres.

- **Sustainability** issues in terms of protecting the environment and global social responsibility. Managers will need to focus on *energy efficiency and emission control* (concentrating quality control on environmental standards) and improve their ability to *re-engineer processes according to CSR and quality*, as well as to settle the bases for providing confidence to customers that the products offered by the organization are manufactured with the aim of *reducing the negative impact on the environment*.
- Prevalence of the basic leadership and **entrepreneurial skills**, i.e. the ability to take decisions based on risk assessment (*risk-taking*), the ability to recognize and implement opportunities for business growth (*creativity and critical thinking*), and other soft skills as *communication, collaboration, cost management, project management, time management, quality management*.

In this context, the field survey addressed to HEIs will be focused both on the new skills to be acquired by the managers from T&C SMEs and on the innovative learning approach and delivery method based on freely accessible online courses via web with a strong use of simulation and real-life situations. **Blended and online learning** will be considered in various formats; the strongest interest being given to the **Massive Open Online Courses (MOOCs)** and the respondents' experience and/or interest and needs in developing these types of online courses.

It is expected that the results will point out the barriers and incentives met by the textile and clothing HEIs in introducing innovative MOOCs.

The findings of the field research will lead to the competence mapping and designing the matrices of new skills to be acquired by the new managers that will lie at the basis of setting-up the EU curricula for the new professional profile of the TECLOM, endowed with more advanced entrepreneurial and managerial skills.

Also, the field research will lead to achieving a **comparative research report**, stressing the main elements to be considered in the planning of the project products, giving necessary information for establishing the **strategy for the future knowledge intensive and innovative textile and clothing SMEs**.

The field research is based on survey questionnaires that will be designed according to a standard research methodology using the results of the desk research. It will be applied mainly to managers from *SMEs/micro enterprises* and to relevant stakeholders from *HEIs belonging to the textile and clothing sector*. Also, this tool could be applied to other experts, stakeholders or local/national authorities.

The field research seeks to identify the barriers / incentives met by the textile and clothing HEIs in introducing innovative MOOCs, as well as the main evidence based advantages of teaching transversal skills, esp. entrepreneurship to SMEs. The final outcome of the Field Research is going to be a comparative research report, stressing the main elements to be considered in the planning of the Project products giving necessary information for establishing the strategy for future knowledge intensive and innovative textile and clothing SMEs.

400 survey questionnaires will be used to gauge the needs as well as the current mindset of European SMEs/micro enterprises and HEIs belonging to the textile and clothing sector, in all partners' countries (50 per country). The selected respondents will belong to two different profiles:

- managers (and other persons in managerial positions) from European micro and SMEs belonging to the textile and clothing sector, currently working (approx. 40 respondents/country);
- relevant stakeholders from European HEIs belonging to the textile and clothing sector (persons in managerial positions, teachers etc.), currently working (approx. 10 respondents/country).

2.7 Conclusions

The TECLO (Textile & Clothing) Alliance was created in order: to improve sectoral identification and anticipation of skills needs and their integration into Higher Education Institutions (HEI) provisions; to develop the needed managerial skills considering the European labour market changes; to help universities develop curricula that are relevant and meet the needs of the sector, equipping graduates with the right skills and mindsets for the labour market, by promoting closer cooperation with the textile and clothing employment sector.

The target is to modernize Europe's higher education system in the field of textiles and clothing through a better anticipation of skills needs based on development of sustainable partnerships between education and employment, which are highly needed.

The chapter on conclusions captures the main points and acknowledges directions for further research and reflection. It assesses the needs of European SMEs in the textile and clothing sector, focusing on growth, innovation and sustainability, through a framework that will anticipate necessary skills and result in better qualified professionals. Collaboration among professional associations, employers and higher education institutions in the formation of future courses is vital to the sector's survival and growth.

The final outcome of the Field Research is going to be a comparative research report, stressing the main elements to be considered in the planning of the Project products giving necessary information for establishing the strategy for future knowledge intensive and innovative textile and clothing SMEs.

The potential beneficiaries of the report are: educational institutions (universities, institutes of technology), enterprises (SMEs, suppliers, R&D centres, etc.), public bodies (chambers of commerce, local governments, professional associations) and users (students, manufacturing companies, creative companies, teachers, researchers, designers, project managers) at European, national and regional levels.

2.8 Annexes

The six Annexes included in the Report provide additional information related to the material presented in the main body. More specifically, ANNEX 1 contains a list of the main international observatories, associations, research centres and HEIs at both European and national level. ANNEX 2 presents useful publications concerning the new skills needed in the textile and clothing sector. ANNEX 3 provides Main European sectorial reports on new skills for the future textile and clothing sector. ANNEX 4 addresses Best Practices and Case Studies on SMEs and HEIs Collaboration. ANNEX 5 deals with Trends and approaches for building effective and engaging MOOCs. It conducts a research carrying out an in-depth examination of the course environment of 76 MOOCs and it also reports a list of Case studies/good practices on using MOOCs for teaching transversal skills. Finally, ANNEX 6 provides two questionnaires, one addressed to companies and the other to HEIs. The questionnaires are developed according to a standard research methodology using the results of the desk research provided in the report. They will be applied mainly to managers from SMEs/micro enterprises and to relevant stakeholders from HEIs belonging to the textile and clothing sector. The field research seeks to identify the barriers / incentives met by the textile and clothing HEIs in introducing innovative MOOCs, as well as the main evidence based advantages of teaching transversal skills, esp. entrepreneurship to SMEs.