

Mapping the market, exploring needs and the demands of skill



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Mapping the market, exploring needs and the demands of skill.

This is a survey report from the TRANSITIONS project. The survey was launched in December 2022 and ended in March 2023.

The goal of the Transitions project is to map the different skill needs of the Textile and Fashion industry (T&F). All aiming at promoting a necessary green and digital transition. The survey asked questions about what the textile and fashion businesses need, to be able to create a circular economy. The survey also aimed at acquiring in-depth knowledge about current skill mismatches.

This survey report is based on the feedback of 158 respondents from both the textile and fashion industry and educators such as VETs and HEIs*. The respondents represent the industry, academia, and the over- all market for textile and fashion around Europe (and beyond).

* *VET = Vocational Education and Training*

HEI = Higher Education Institutions

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About the project

TRANSITIONS (an Erasmus+ project) is a strategic alliance for innovation formed by research and technological centers, Vocational Education and Training (VET), Higher Education Institutions (HEI), public policy actors, SMEs, and other sectoral organizations from Spain, Italy, The Netherlands, and Sweden.

The aim is to nurture the textile and fashion transition to a 4.0 system and a circular economy by developing new learning methods, tools, and practices to help students, young designers, and professionals to face real challenges.

The objective is to create collaborative and real work-based training where the different actors in the value chain work on how to take advantage of technology to generate new value proposals and new business models within a circular economy.

Transitions propose a multidisciplinary pedagogical approach based on transition design theories and emerging disciplines and practices at the intersection of textile, biology, and digital fabrication.

The TRANSITIONS project is co-funded by the European Union.

General objectives:

to foster new, innovative and multidisciplinary approaches to teaching and learning, fostering innovation in education design and delivery, teaching methods, assessment techniques, learning environments and developing new skills

- facilitating the flow and co-creation of knowledge between higher education and vocational education and training, research, the public sector, and the business sector.

Specifically, TRANSITIONS will:

- create a modular training program based on Industry 4.0 for a T&F new circular system
- set up innovation-focused training modules based on real practice and challenges (Transition Labs) to skill, reskill and upskill students and professionals
- develop new ways to generate innovation in textile and design processes, production, and commercialization.

Read more about the **TRANSITIONS** project:
<https://transitionsproject.eu/>



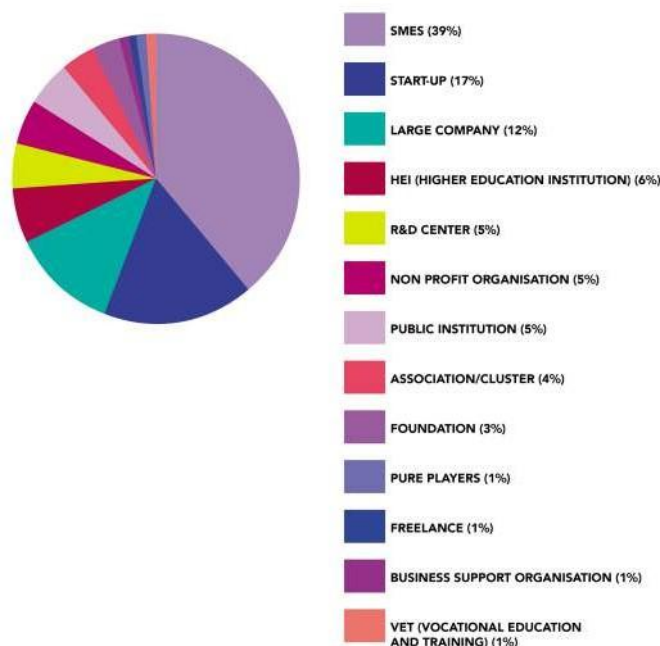
Targeting and responses

Survey target audience

The survey reached out for a broad selection of stakeholders, all closely related to the textile and fashion industry

- SMEs from the fashion sector and other cross-sectoral areas
- Fashion start-ups
- Fashion textile design students
- Young designers
- Universities and researchers in fashion and textile design
- High Education Institutions (HEI)
- VET providers in fashion and textile design
- Knowledge Institutions
- Cluster/networking organizations from within the fashion and textile industries and the sectors interconnected in the TRANSITIONS project (circular economy, environmental, and digital)
- Technological centers
- Fashion networks and professional associations
- All the specialists in design and training development in fashion and textile.

TYPE OF INSTITUTION



Survey responses

The responses of the survey came predominantly from VET, HEI, and professionals within the textile and fashion sector. The respondents are from ten (10) European countries and four (4) non-European countries.

- Italy
- Spain
- Sweden
- The Netherlands
- France
- Germany
- United Kingdom
- Austria
- Finland
- Iceland
- Australia
- China
- Mexico
- United States of America

Who responded?

Many respondents work for companies within the industry, more than 2/3 of the responses came from SMEs, start-ups, and larger companies. HEI, VETS, and R&D centers represent 12 % of the respondents.*

Looking at the numbers in another way, companies, and organizations with less than 50 employees stood for 67 % of all responses. Medium-sized and large companies (51 to more than 250 employees) represent 29 % of the responses.

* SMEs = Small and Medium-sized Enterprises
VET = Vocational Education and Training
HEI = Higher Education Institutions



Challenges and strategies

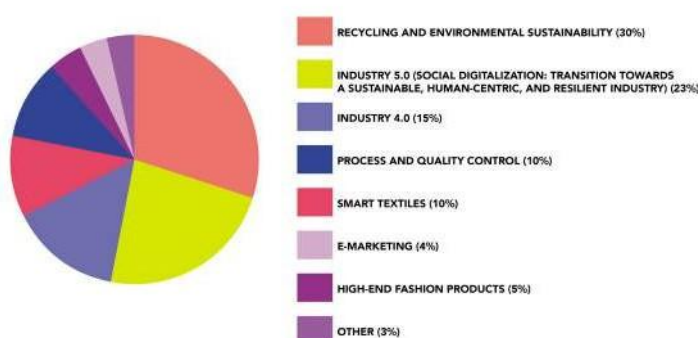
Strategic areas for the next 3 to 5 years

There are four areas that stand out when the respondents rank them in order of strategic importance:

- recycling
- Industry 5.0
- Industry 4.0
- process and quality control.

Together these areas are ranked highest by 78 % of the respondents, with Recycling (and environmental sustainability) ranked highest by 30 %. Remarkably, Industry 5.0 was ranked higher than the more commonly known Industry 4.0. Ranked as five was Smart textiles (10 %).

AREAS CONSIDERED MOST STRATEGIC FOR THE TEXTILE AND FASHION INDUSTRY IN THE NEXT 3-5 YEARS



Recycling

Recycling is the area considered most strategic for the textile and fashion industry, to make the sector more environmentally sustainable. The textile and fashion sector is a highly resource-intensive and a waste generating industry. Beyond the direct economic benefits, scaling textile recycling unlocks several environmental and social benefits.

Modern/future industry skills

(Industry 4.0 and 5.0)

The EU industry of the future, aka Industry 5.0, aims beyond efficiency and productivity. It reinforces the contribution of industry to society, and here is where skilling and upskilling human resources become a key element. At the very center of Industry 5.0 is the empowerment of workers, and the evolving of skills. The textile and fashion industry has a great demand of new and

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continued

upgraded skills, as well as knowledge in terms of production capacities. To maintain its attractiveness towards (young) talents, tailor-made programs are required by manufacturing companies, but also by other important stakeholders. Introducing new professional profiles skilled for the digital and green transitions may also make our industries more resilient against external major events, such as the Covid-19 crisis.

Process and quality control

This has always been a very pressing issue for manufacturers in the textile and fashion sector. It's a well-known fact that a big part of the pre-consumer textile waste is due to imperfect or out of date quality control systems. For example, using new methodology within I4.0 and I5.0 offers the opportunity to real-time quality control. This would drastically reduce the production of pre-consumption textile waste.

Extended producer responsibility

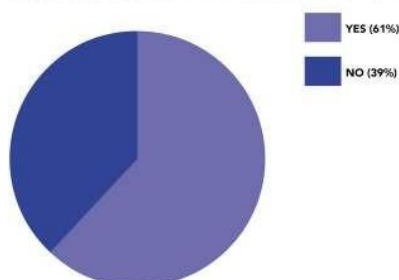
The survey also asked whether the respondents were aware of the EU Extended Producer Responsibility (EPR). 61 % said that they believed so and that this would impact their need for the upskilling of their employees.

EPR is one of the market tools that promotes a transition to a circular and sustainable economy. To be able to comply with the new regulations, stakeholders need to know the legislation, management procedures, communication practices, corporate systems, financial issues, etc. The skill need is big, it cannot be covered by just outsourcing to external consultants.

** EPR = Extender Producer Responsibility.*

The EU policy is defined as "an environmental policy approach in which a producer's responsibility, physical and/or financial, for a product, is extended to the post-consumer stage of a product's life cycle".

ARE YOU AWARE OF THE EXTENDED PRODUCER RESPONSIBILITY SCHEME (EPR) AND DO YOU BELIEVE THEY COULD IMPACT THE NEED FOR UPSKILLING THE EMPLOYEES OF YOUR ORGANIZATION REGARDING SUSTAINABILITY AND DIGITALIZATION?



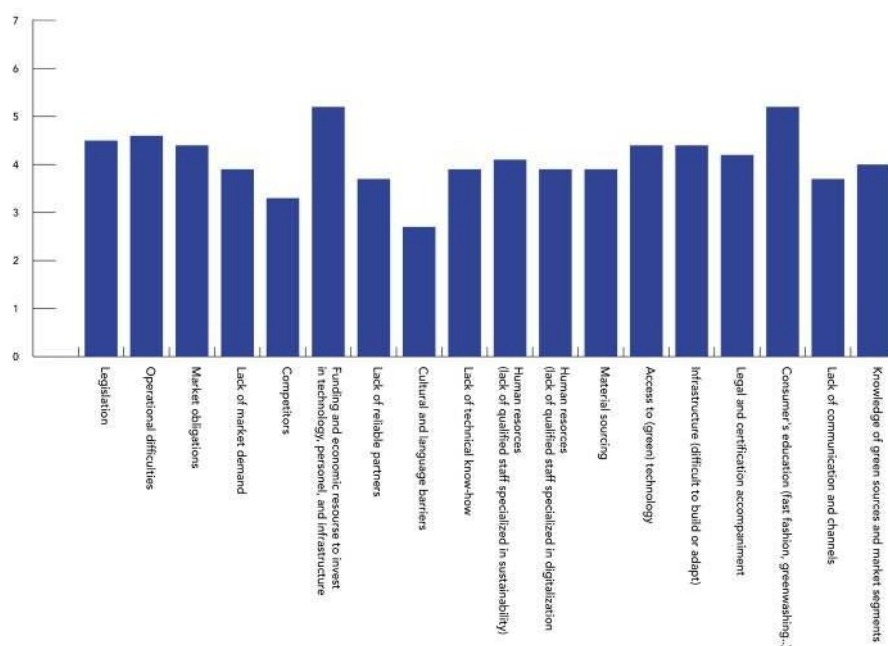
Main difficulties

To make the transition towards a circular economy, the respondents ranked the main difficulties and challenges for their company/organization. Two answers stand out:

- Funding and economic resources to invest in technology, personnel, and infrastructure.
- Consumer education and awareness.

Ranked third, as a challenge, is Operational difficulties.

ORGANIZATION'S MAIN DIFFICULTIES OR CHALLENGES IN TRANSITIONING TOWARDS MORE SUSTAINABLE OR CIRCULAR PRACTICES



Funding

There is a remarkable lack of educated personnel in the industry. While there are several EU programs financially supporting SMEs, many of the textile and fashion SMEs still have difficulties getting access to them, for a very diverse number of reasons.

Consumer education

The consequences of the textile sector on the environment and social aspects are one of the dis- criminating brand factors. Consumer awareness is one of the top priorities to achieve a green transition for the industry. The idea of consuming too much and too often needs to change.

The skills and tools needed

Different types of skill

The very focus of this report is to define the skills needed for a circular economy. There are not only many different experts needed but also different types of skills. The survey divided these into Digital skills, “Green” skills, and Soft skills.

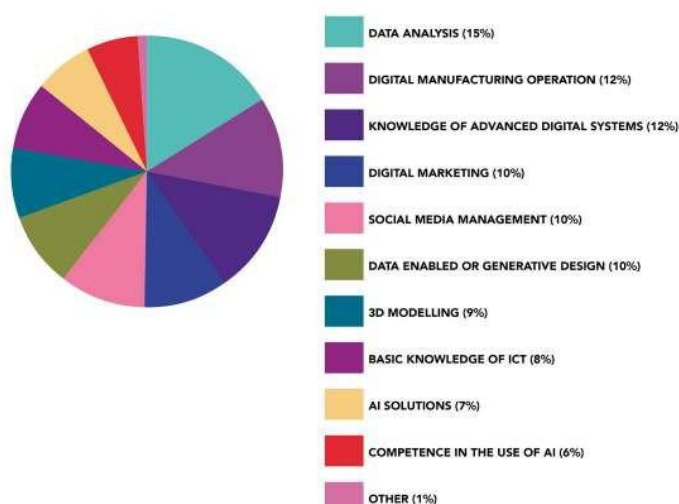
Digital skills

Digital skills play a key role in the transition to a circular economy. Investing in digital capabilities means working with advanced technological innovations. Thus, making production more precise and more sustainable, by combining production automation, product technology, big data, AI, and machine learning as the main innovative tools. The three most wanted digital skills are according to the respondents:

- Data analysis
- Digital manufacturing operations
- Advanced digital system knowledge.

It is important to say, other skills are much in want too.

DIGITAL SKILLS



Green skills

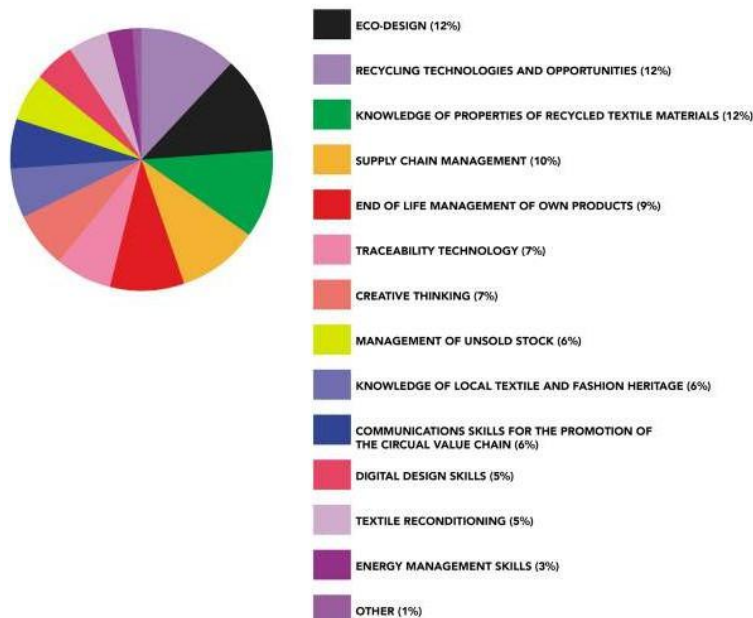
(contributing to sustainability and a circular economy)

When fostering a transition to a circular economy, so-called “green skills” are also important. The three capabilities most respondents saw as essential for this transformation are:

- Eco-design
- Recycling technologies and opportunities
- Knowledge of the properties of recycled textile materials.

Eco-design is strongly connected with the other two. Textile recycling is one of the main solutions identified to address the textile-waste problem. And it also addresses upstream production by replacing virgin materials with recycled materials.

ESSENTIAL CAPABILITIES FOR CONTRIBUTING TO SUSTAINABILITY AND CIRCULAR ECONOMY



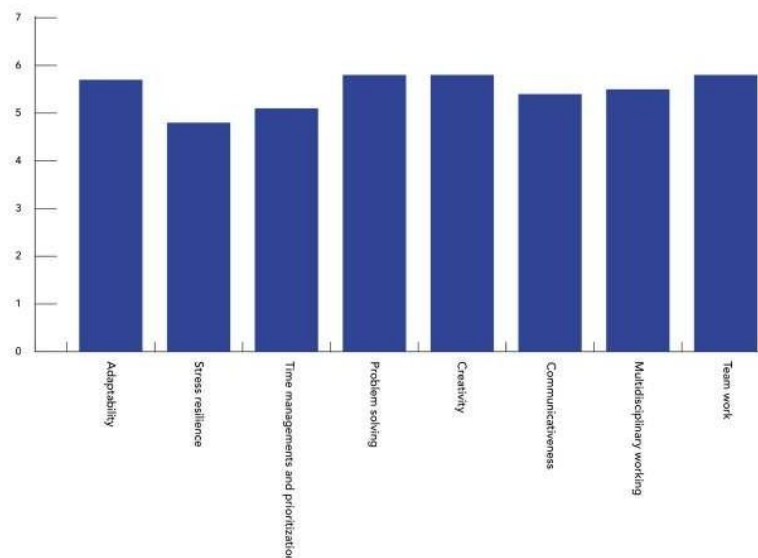
Soft skills

To support the transition, it is necessary to have green and digital skills. However, it is also very important with skills that go beyond technical capabilities. These are skills such as Adaptability, Problem-solving, Creativity, Multidisciplinary working, Teamwork, and more.

The results of the survey show a high ranking of all kinds of soft skills. This shows us how essential these skills are for many businesses, VET, HEI, and other textile and fashion professionals.

A high level of adaptability in terms of environment, working conditions, working under pressure, industrial and human relations, and product/process technological know-how is required for people in the textile and clothing industry. Soft skills play an important role in this respect, in general being as important as technical and operational capacities are.

SOFT SKILLS NEEDED IN THE TEXTILE AND FASHION INDUSTRY FOR THE TRANSITION



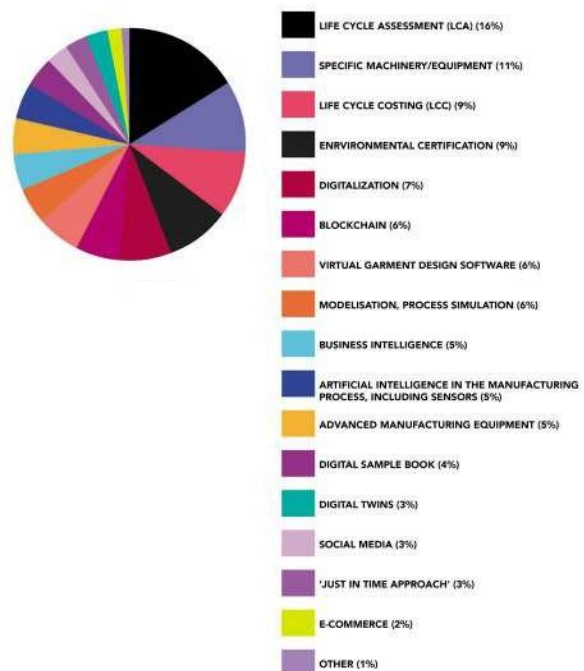
Important tools

When asked which tools are the most important in creating a circular economy, the respondents rank four of them highest:

- Life Cycle Assessment (LCA)
- Specific machinery/equipment
- Life Cycle Costing (LCC)
- Environmental certification.

Once again, there are also other answers that ranked high. That said, the four tools above stood out with a total of 45 % of the respondent's first ranks.

IMPORTANT TOOLS FOR CONTRIBUTING TO A CIRCULAR ECONOMY



Life cycle assessment (LCA)

LCA is ranked highest. The companies need to find out where in the value chain the environmental impact is the greatest. In this way they can identify what measures they need to take to reduce the impact.

LCA is an internationally standardized methodology, which provides the framework for assessing the potential environmental impacts of products currently available.

Specific machinery/equipment

The textile manufacturing machine park is also continuously improving in its performance to contribute on the road towards a circular economy.

Life cycle costing (LCC)

LCC is a methodology for calculating costs along the life cycle of a product. From the production stages, through the use stages, to disposal (end-of-life). Given specific conditions, LCC makes it possible to define what the most efficient responses can be. Both from an environmental point of view and a financial one.

Environmental certification

Environmental certifications have emerged as a very important issue. We need to know what materials we use in our garments, so we can recycle better. Therefore, product passports and the integration of information about the garments and the materials are important keys to developing and creating a circular economy.

Creating a sustainable workforce

Skilling the workforce

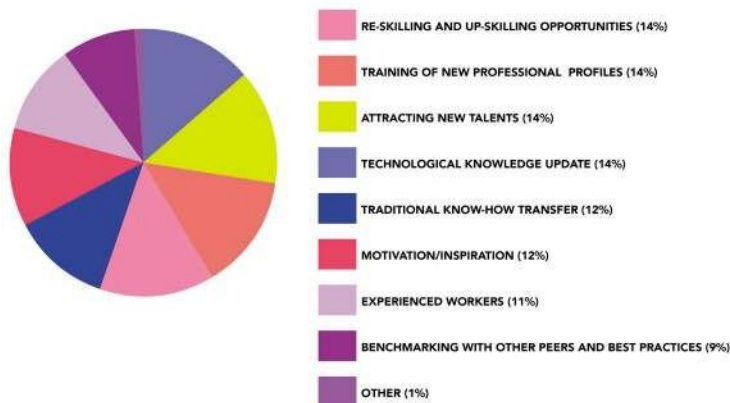
To be compliant with sustainable practices and circular economy transition, we need to have a workforce with certain capabilities. On one hand, we have different skills (mentioned earlier), on the other the ability to use and have access to a certain set of work tools.

The survey therefore asked about how to obtain those main needs skills for the industry. Four training needs are highest ranked:

- re-skilling and up-skilling
- the training of new professionals
- attracting new talent
- technology knowledge updating.

Once again other needs were also important in this area, for example, Know-how transfer, Motivation/Inspiration, Having experienced workers, Benchmarking (with other peers, and best practices).

REGARDING WORKFORCE, WHAT ARE THE MAIN NEEDS IN THE TEXTILE AND FASHION INDUSTRY FOR BEING COMPLIANT WITH SUSTAINABLE PRACTICES AND THE CIRCULAR ECONOMY TRANSITION?



Attracting and training

The textile industry is facing a skills gap as many experienced workers are nearing retirement age. At the same time, not enough young people enter the industry. It is therefore important both to find new talents and to make sure that the existing workforce can be upskilled.

Textile workers population is overaged now and will be even older in 5 to 10 years if countermeasures aren't adopted. Two different needs are obvious

according to the survey. Firstly, a need of the training of new professionals. Secondly, it is all-important that the industry can attract new talents. Targeted strategies to attract a younger generation to the industry must be put in place starting now. The values of young workers today need to be analyzed, and after that, we need to implement new strategies. Strategies that allow the textile industry to respond to those values and to attract young talent.

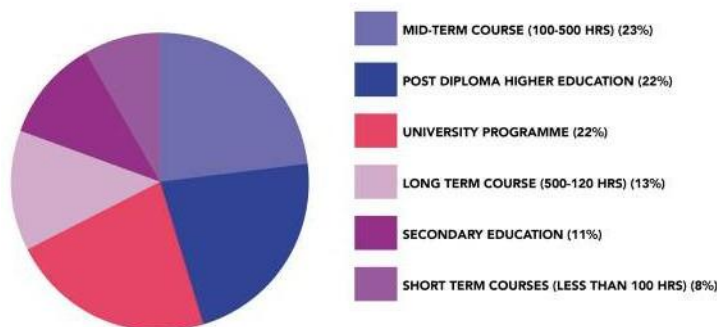
Professional and market needs for training

Training new professionals

The TRANSITIONS project also investigates the textile and fashion industry's needs in terms of types of training. The survey shows what the respondents think are the most appropriate and necessary way to train new professionals:

- mid-term courses (100-500 hrs)
- post diploma / higher education
- university programs.

TRAINING NEW PROFESSIONAL FIGURES



Mid-term courses

The mid-term courses are probably preferred since they take not so much time. Yet, a course of 100-150 hours can be finished in a month, on full time. These courses still have adequate time to transfer a lot of information and skills, and to deepen the topics the students consider more interesting and useful for their future profession.

Post diploma / higher education

As for the post-diploma higher education, they offer tutoring in a specific educational field and high-level training for companies. Moreover, they offer teaching activities based on job projects, work

simulations and laboratories which train super-specialist workers. Students can participate in tailor-made projects, and internships are the first work experience for these super-specialist workers.

University programs

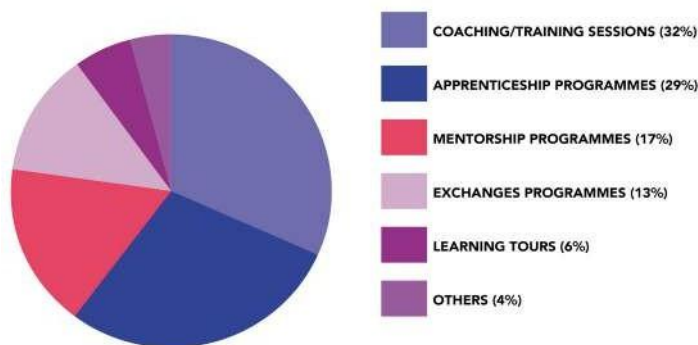
The university programs are perhaps preferred for higher profile professionals (designers, engineers, managers). These must have a deeper knowledge of management issues and an entrepreneurial mindset. For example, taking decisions considering all the aspects of the problem, thinking out-of-the-box, and being capable of design process thinking

Training to update skills

When it comes to the need to update active professionals in the textile and fashion sector, the most frequent answers from the respondents are (together 78 %):

- coaching / training sessions
- apprenticeship programs
- mentorship programs.

TRAINING FOR UPDATING THE
ACTIVE PROFESSIONAL FIGURES



Coaching / training sessions

Coaching/training sessions are designed to transfer knowledge and experiences necessary for the learner. It can be performed by older and more experienced colleagues, working at the same company.

Mentorship programs

Mentorship programs are preferred when some people are very skilled in their job. Those people can transfer some of their knowledge, while bringing personal experiences, information, and advice. As that knowledge isn't theoretical but come from the real world, it's often priceless.

Apprenticeship programs

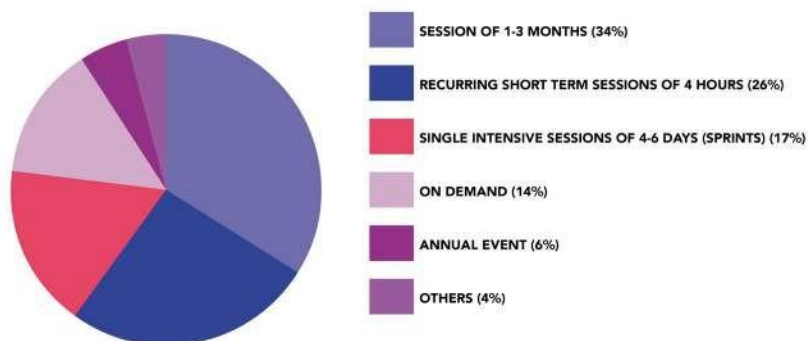
Apprenticeship is aimed for younger professionals. Therefore, it focuses less on a single skillset. It is more generally oriented to teach all the activities that person will do within a company.

Ideal composition of training activities

Among the various aspects considered when choosing a type of training, there is also the aspect of its duration. In this regard, the most selected answers are:

- sessions of 1-3 months
- recurring short-term sessions of 4 hours
- single intensive sessions of 4-6 days (sprints).

IDEAL LENGTH FOR TRAINING ACTIVITIES



Sessions of 1-3 months

This both offers a certain quickness of training and the possibility to go in-depth with the topics for the students. This is the training model that is possibly preferred for new personnel.

Recurring short term sessions of 4 hours

The recurring short sessions can be useful to transfer a bit of knowledge at a time. The student may reflect on what has been taught, and possibly ask for clarifications in the following meeting.

Single intensive sessions of 4-6 days (sprints)

A single intensive session (sprint) could be preferred when the students already are working with the topic. A topic requiring that specific knowledge needs to be upskilled or reskilled. Yet, this training can be used when the participants want to finish all the training in one shot, to be able to solve actual challenges within a relatively short time.

Summary of survey report

The TRANSITIONS project survey report is based on **158 respondents**, from 10 European and 4 non-European countries. The survey was conducted between December 2022 and March 2023.

Four strategic areas have been pointed out as important for the textile and fashion industry: Recycling, Industry 5.0 and 4.0, and Process and quality control.

More than 3 out of 5 (61 %) are aware of the **Extended producer responsibility** and that this might impact their operations soon.

The respondents highlight **two aspects to make the transition** towards a circular economy:

- funding and economic resources to invest in technology, personnel, and infrastructure
- consumer education and awareness.

The respondents picked out **certain skills needed**, divided into Digital skills, “Green” skills and Soft skills.

For **Digital skills** these three are ranked highest in need: Data analysis, Digital manufacturing operations, and Advanced digital system knowledge.

When it comes to **“Green” skills**, three are the most wanted: Eco-design, Recycling technologies and opportunities, and

Knowledge of the properties of recycled textiles materials.

For **Soft skills** there are a multitude of skills needed: For example, Adaptability, Problem solving, Creativity, Multi-disciplinary working, Teamwork, and more.

When ranking **tools for creating a circular economy**, 4 tools are ranked highest: Life Cycle Assessment (LCA), Specific machinery/equipment, Life Cycle Costing (LCC), and Environmental certification.

Four types of training needs are highest ranked: Re-skilling and up-skilling, The training of new professionals, Attracting new talents, and Technology knowledge updating.

The most appropriate and necessary **ways to train new professionals** are: Mid-term courses (100–500 hrs), Post diploma/higher education, and University programs.

The most frequent answers for **updating active professionals’ skills** are: Coaching / training sessions, Apprenticeship programmes, and Mentorship programs.

Finally, when it comes to **preferred lengths of training activities**, the most selected answers are: Sessions of 1–3 months, Recurring short-term sessions of 4 hours, and Single intensive sessions of 4–6 days (sprints).



The TRANSITIONS project survey:

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More on the *TRANSITIONS* project:
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