Training Package







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1 Introduction

In recent years teaching methodologies have been increasingly improved, so there is a growing range of different options available to VET institutions. This reality has led to passive learning approaches becoming less valued.

We can say that teaching methodologies are changing learning environments around the world, providing renewed academic performance.

The rapid transformation we are witnessing, be it technological, social, or in values, among others, has driven the need for adjustment and improvement. If on one hand we have a society looking for the most successful student/trainee to help in becoming more competitive on economic grounds, on the other hand we have students/trainees with a will to know and to be a part of this process. This reality has led managers/directors and teachers/trainers to rethink teaching and learning models and methods.

This training package was developed through collaborative work between the partners, in order to combine knowledge and experience from each entity.

The methodologies and resources presented in this toolkit serve as inspiration and guide for the implementation of the Clothing Technician profile/qualification by each VET provider.

The training package is structured in three parts. The first part presents the Clothing Technician Profile and the relationship between the competence units, the second part presents the main active methodologies of teaching/training, and the last part presents a set of activities consisting of a case study, a group dynamic and a practical case for each competence unit. In total, 27 activities were developed to help future trainers to implement the Clothing Technician Profile and Qualification.



2 Training Package

This training package aim is to help in implementing the Clothing Technician Profile.

The resources presented here will be put foward in the training of trainers that will be held in the three countries integrating the partnership (Portugal, Romania and Spain).

For the development of the Clothing Technician profile/qualification the partnership defined what would be the output profile of the trainees, the main activities performed, the general and the professional competences to be developed, as well as the teaching/training and the evaluation method. You can find this detailed information in the document Clothing Technician Profile and Qualification.

2.1 Relationships matrix between Competence Units

This matrix allows to establish conections within each Competence Unit, among the training modules that it encompasses, and also conections between modules of different Competence Units. In this manner, we may operationalize the link between contents and objectives of the Competence Unit (blocks of training modules) according to the Clothing Technician profile. We may also operationalize the schedule stemming from the conections definition, e.g., precedences and simultaneity between modules. This analysis will be a part of the train the trainers' action, in order to better prepare VET providers and trainers in implementing the profile/qualification.



			Cl	U1			CU2	2	Cl	U3	CU4		CU5	5		CU6		Cl	J7	CU8	С	:U9
Relationships	matrix between modules	M11. Raw materials	M12. Determination of provisioning	M13. Storage management	M14. Technical information for industrial clothing	M21. Production schedule	M22. Layout methods	M23. Production control	M31. Quality control in processes	M32. Occupational risk protection and environmental protection	M41. Technical data sheets development	M51. Technical manuals and procedures	M52. Working methods	M53. Work measurement	M61. Manual pattern making - initiation	M62. Cutting fundamentals	M63. CAD - pattern making initiation	M71. Fabrics cutting technology	M72. Technical and clothing products assembling technique	M81. Products finishing process	M91. Fabrications necessary technical documentation	M92. Semi-finished components and finished products quality control
CU1 Planning the production	M11. Raw materials					8											9 6					
	M12. Determination of provisioning																					
	M13. Storage management M14. Technical information for industrial clothing																					
CU2 Organizing the production	M21. Production schedule				1.00															6 - P		
	M22. Lavout methods																			1		
	M23. Production control																					
CU3 Monitoring the production process	M31. Quality control in processes M32. Occupational risk protection and environmental protection																					
CU4 Executing technical	M41. Technical data sheets development														-					x x		
manuals	M51. Technical manuals and procedures														-							
	M52. Working methods																			8		
CU6 Using pattern making	M53. Work measurement															1	2 8		2			
tools (manual and digital)	M62. Cutting fundemosters		-	-		-	-	-		-		-	-							8 - 10 1		
	M62, CAD - pattern making initiation							-					-									
CU7 Operating manufacturing	M03. CAD - pattern making initiation																					
machines	M72. Technical and clothing products assembling technique																					
CU8 Undertaking the finishing	M81. Products finishing process																					
CU9 Using quality and technical standards	M91. Fabrications necessary technical documentation																					
	M92. Semi-finished components and finished products quality control																					
Transversal training	Interpersonal communication and assertiveness													230						2 2		
	Learn leadership and motivation							-					-		-						\vdash	
	Time management and work organisation	-			1. 1.			-						2-0						8 - 8	\vdash	-
	the management and work organisation																					

Figure 1 - Relationhips matrix between training modules (form)



	CU4	CU5					
	Executing technical sheets	Performing procedure manuals					
Results	Technical sheets	Manufacturing flow chart; Production Procedures Handbook					
Relationship between CU	CU1 to CU9 The result of CU4 is integrated into contents of some Modules and contributes to obtaining the result of all CU						
	CU4 a The only module (M41) of CU4 is modules "M52. Working methods measurement"	nd CU5 s related with, for instance, s" and "M53. Work					
Relationship between Modules	CU4 • M41	CU5 • M52 • M53					

Figure 2 - Example of connections between modules in different competence units.





2.2 Learning and teaching/training methods for VET

Choosing and applying the most appropriate teaching/training techniques and methods according to the objectives of a training is a crucial factor for learning success. Therefore, it is important to define which methods and techniques are best suited to the objectives, the target audience and the context in which the training takes place.

An active teaching/training method places the learner at the center of the learning process, creates a favorable environment for learning and is defined by dynamic, creative and collaborative activities.

Teaching/training methods are a system of trainer actions that promote the acquisition of learning objectives, using a set of integrated techniques and procedures and using appropriate materials.

These actions are intended to develop in the trainees the ability to learn new skills and abilities, the acquisition of new knowledge and the modification of attitudes and behaviors.

There are numerous methods and materials, assotiated with the most effective training techniques, available to help you prepare IVET and CVET learners to better do their jobs.

The choice of the best techniques makes it possible to encourage the best learning behaviours.

An overview of the most common Active Training Methods is presented in the table below.

Training method	Brief definition
Mind mapping / Brainstorming	Mind mapping and brainstorming are staple methodologies for any problem- solving activity. In these sessions, trainees come up with ideas and post them on a board. As a group, the trainees then select the best ones and use those to come up with a solution.
Role Playing	Role playing simulates real-life situation that requires problem-solving skills. It is also a medium for gauging actual performance. Role playing activities can include job simulations like customer or colleagues' interaction.
Flipped Classroom	Lessons are 'flipped', meaning that most of the work like reading and research are all done outside of class. Flipping a classroom leaves more time for the facilitator to implement active learning methods during class time. This concept works on making efficient use of class time with less (or no) lectures, and more time for activities.
Case study & Practical cases	In this method, trainees are confronted with a real or fictitious scenario and must apply new knowledge as well as previous experiences to analyze the situation and develop the solution.
Group dynamics	Its main objectives are to boost training, encourage group work and improve the integration of theoretical knowledge into a practical context.





Job shadowing	This method consists in the possibility of a trainee or professional in career transition spending some time (one or more days) with a competent worker in a certain occupation, in order to learn about that activity, observing the way it is performed.
Demonstrations	Allows you to transfer performance / achievement skills through the description of procedures, tasks, events, processes, etc.
Virtual Reality (simulations)	Represents replicas or mimics of actual events, reflecting the reality and allowing continuous observation. A simulation allows to create a real example of a current or environmental situation.
Project work	It is a working method based on the participation of the members of a group, with the objective of carrying out a work planned and organized by common agreement. Trainees have the opportunity to synthesise knowledge from various areas of learning, and apply it critically and creatively towards solving a problem.

2.2.1 Work-based learning (WBL)

In a rapidly evolving, highly technological world employees increasingly need to develop skills categorized by these various elements (Helyer, 2015, p.15).

Vocational education and training have been adapting to a changing society, where the need for knowledge is strong.

WBL is an educational strategy that allows trainees to create an effective vehicle to put theory into practice through participation in different real-life work experiences. These experiences can be carried out through internships/traineeships, job shadowing programs, simulations, mentoring, and other experiences.

One of the great advantages of this learning strategy is that it allows a real bridge between education and the world of work.

WBL activities allow the trainee to get to know one or several occupations better, which will certainly help in the choice of an academic or occupational field.

In terms of delivery, work-based learning can take place onsite, in a company or organisation, or within a more traditional learning environment such as a classroom or training centre, the latter targeting learning that is vocationally or occupationally relevant and which centres on meeting the needs or expectations of a particular industry or profession.1

According to Helyer (2015), the modern workforce requires workers with adaptable and entrepreneurial attitudes, who are willing to learn continuously.

We present in the table below some of the main benefits of the WBL for trainees, companies and educational organizations.

Clothing Technician Profile Update via Education

^{1 &}lt;a href="https://www.wbl-toolkit.eu/index.php?id=13">https://www.wbl-toolkit.eu/index.php?id=13





	Benefits of work-based learning (WBL)
Learner/trainee	Opportunity to align theoretical learning with the expectations of the future profession. Allows the acquisition of a deeper knowledge through experimentation.
Companies	It allows to have better informed and more effective workers, thus improving the overall efficiency of the company and ensuring its competitiveness in the future. It can significantly contribute to the development of the workforce in sectors where there are identified skills gaps, or where occupations or sectors are among the least favoured.
VET providers	Training programmes become more attractive to trainees. In addition, they make it possible to create richer and more structured training programmes promoting sustained learning. Partnerships with companies can also provide access to technologies that would not otherwise be possible.

The resources developed by the partnership and presented in this document were created having in mind the value of active teaching/training methods (such as case studies, practical cases, goup dynamics) and of work-based learning.



2.3 Clothing Technician Profile and Qualification Teaching/Training Resources

In the table below we present a summary of the resources developed, followed by a detailed description of each one.

Clothing Technician Profile						
Competence Units	Case study	Group dynamic	Practical case			
CU1 Planning the production	Improvement of the company supply chain management system	Planning the production – ERP modules	ERP and planning the production			
CU2 Organizing the production	How to organize the production?	Company layout	Controlling the production			
CU3 Monitoring the production process	Quality control	Health and safety, protective clothing and risk protection	Environmental risks			
CU4 Executing technical sheets	Improvement of the technical sheet development process	Technical sheets – puzzle dynamic	Creation of technical specifications for the polo shirt			
CU5 Performing procedure manuals	The best work method	Create a procedures manual for Clothing	The work quantification			
CU6 Using pattern making tools (manual and digital)	The purchase order	The straight grain line	Switched components during manufacturing			
CU7 Operating manufacturing machines	Ability to select the tools needed to achieve the objective	Follow the steps/procedure	Assembly of T-shirt using different manufacturing machines			
CU8 Undertaking the finishing of garments and accessories	Discover the advantages of latest finishing technology	Finishing operations – Mosaic dynamics	Identify the finishing operations/parameters for different products			
CU9 Using quality and technical standards	Identification of non- conformities. Corrective and preventive actions.	Implementation of an algorithm for continuous improvement	Elaboration of procedures on manufacturing phases			





This document can only be fully understood and correctly applied when used in conjunction with the "Clothing technician profile and qualification" document. Please refer to the later for a comprehensive description of the competence units.

2.3.1 Competence unit 1 - Planning the production

Case study					
Tittle	Improvement of the company Duration 3 supply chain management system	hours			
Description/content	The company Textile Garment Production Ltd. is a far business from 1979. It is a company which started business and continued to grow untill now. No company has 80 employees, but it is managed wi principles as forty years ago, with a very low digitization and with no ERP system. John Doe, the son of the company founder, wants to stock management systems as the company here received a few complaints in the workwear line important clients. Some delays occur due to a lack of other are human errors due to the particularit production line.	amily running from a small lowadays the with the same w degree of o improve the has recently he from very of stock, and rities of this			
Questions for reflection	 If you were John Doe, what would you measures and action plan would you suggest Predict more complaints and future errors that if the problem is not solved. Will this signifit the company turnover? Could this also hap products and lines of the company? Explain any other measure to reduce errors. 	u do? Which t? at might occur ficantly affect open in other			
Resources	Computer Connection to Internet				





	Tao, X. M. (2012). Fashion supply chain management: industry
	and business analysis.
Bibliography	
	Kamath, N. (Ed.). (2016). Handbook of research on strategic
	supply chain management in the retail industry. IGI Global.

Group dynamic									
Tittle	Planning the production – ERP modules	Duration	45 minutes						
Objectives	Apply production planning techniques. Develop a plan to organize the workplace and work time. Work cooperation, logical thinking and problem-solving skills.								
Description/content	 Divide the class into groups of 3 all groups a question related to p Rules: For each correct answer the element of an ERP. Only the first group answer the ERP. The game finishes when the and obtains all modules. When a group answers wro or pass the question. Each group has 20 minutes Suggested questions: What is an ERP? Name a module of an ERP. 	people. The mo lanning the prov e group will obt ering will obtair e first group cor ong, the next gr	derator will ask duction. ain a module or the module of mpletes the ERP oup can answer						





	Which module of the ERP is more linked to production?
	Which module of the ERP is more linked to stock management?
	An ERP includes a module for human resources? Why?
	Which raw materials are most important for the company?
	Name some brands of ERP.
	After 20 minutes, identify the groups that successfully completed the activity.
	Facilitate reflection on the learning acquired.
Resources	Paper, dashboard, questions
Bibliography	Not applicable

		Practical c	ase			
Tittle	ERP and production	planning	the	Duration	8 hours	
Objectives	Overall understanding of how an ERP works Identify important sales seasons to plan the production					
Description/content	Divide the cl the different The group v Internet the explanation Apart from different dep module. Groups mus year that s production.	ass into grou modules of a vill have to l different mo of each modu the explana partments of t also identif	ips of 3 an ERP. earn an dules o ile. tion, it the con y impo aken in	people. Give each of search in boo f an ERP and pro is important f npany that are a prtant sales seas nto account for	ach a table with oks and on the ovide a detailed to indicate the ffected by each sons during the r planning the	





	Computer
Resources	Internet connection
	Paper
	Hamilton, S. (2003). Maximizing your ERP system: a practical
	guide for managers. McGraw Hill Professional.
Bibliography	Wallace, T. F., & Kremzar, M. H. (2002). ERP: making it happen:
	the implementers' guide to success with enterprise resource
	planning (Vol. 14). John Wiley & Sons.





2.3.2 Competence unit 2 - Organizing the production

Case study						
Tittle	How to production?	organize	the	Duration	3 hours	
Description/content	The company business from business and You have bee summer period the production production, as demand and s Another problic time of raw m	Textile Garm 1979. It is continued to n hired for a od. The CEO H on plan and s the company sales and in lem is the lac naterials amo	nent Pro a comp grow u n interr nas ask d impr ny foun organiz k of spa ong dep	oduction Ltd. is a pany which start untill now. Iship in the comp ed you to check rove the organ d some difficulti ing the production ace in the plant, a partments in the	a family running ed from a small pany during the how to improve lization of the es in predicting on phase. and the delivery company.	
Questions for reflection	 Would Product product Which Which improv Would 	you sugges tion by p tion, Just in ⁻ system is be external fac ing your pro- you improve	st any roject, Fime, K tter in y tors yc duction the lay	type of produ Batch produ aizen, Lean Man your opinion? ou would need ? yout of the plant	iction method? ction, Custom ufacturing, etc. to consider for ?	
Resources	Computer Internet					
Bibliography	Sánchez, J. V Pirámide. Stecke, K. E integer produ systems. <i>Mar</i>	7. (2014). Or 5. (1983). Found the section planning the section agement sci	ganizac ormulat ng prob ence, 2	ción de la produc cion and solutic lems for flexible 29(3), 273-288.	cción. Ediciones on of nonlinear manufacturing	





Bellgran, M., & Säfsten, E. K. (2009). *Production development: design and operation of production systems*. Springer Science & Business Media.

Group dynamic							
Tittle	Company layout	ompany layout Duration 45 minute					
Objectives	Improve the company layout Reduce internal delivery times and processes						
Description/content	 Divide the class into groups of 3 copies of a diagram of the proposed of the propos	B people. Each g oduction plant w t in a A3 paper. one of the diagra ther is used as a nust think about uction and the p reviously cutted of the plant as in group to explain group to explain layout. ill have to expla that layout (10 r the best option b).	yroup is given 2 vith the current With a pair of ms the different base to see the a possible new rocesses. To do equipment and a puzzle. why they chose and equipment and equipment in to the other min) among all the				
Resources	Paper, scissors						
Bibliography	Not applicable						





Practical case							
Tittle	Controlling the production	Duration	8 hours				
Objectives	Learn which technologies and methods exist to comproduction. Know the most important aspects and get an overall idea technology.						
Description/content	Divide the class into groups of 3 people. Each group must think about different systems, solutions, methodologies, technologies, etc., which could help to control de production. Each group will have to prepare a presentation for the next day with no more than 10 slides but not less than 5, explaining the technologies, methods, system, solutions they believe are the most important for a textile company.						
Resources	Computer Internet						
Bibliography	Ghiani, G., Laporte, G., & Musma logistics systems planning and c Kiran, D. R. (2019). Producta Comprehensive Approach. Butte	anno, R. (2004). <i>ontrol</i> . John Wile <i>ion Planning al</i> rworth-Heinema	Introduction to ey & Sons. nd Control: A nn.				



2.3.3 Competence unit 3 - Monitoring the production process

Case study						
Tittle	Quality control	Duration	3 hours			
Description/content	After your period of studies, you have been hired to internship in a textile clothing company during the superiod. You have heard the Production Manager talking different measures to be implemented in the compa- improve the quality control and inspection of products, as important customers have complained about different definition the clothes.					
	The Production Manager has ask suggestions for the next day.	ed you to provid	e some ideas or			
Questions for reflection	 Would you suggest any processes/technologies? Would you increase the n control department? Would you implement any the product quality? 	automated qua umber of worker y digitalization to	ality inspection rs in the quality pol to follow up			
Resources	Computer Internet					
Bibliography	Lavado, F. E. L. (2012). <i>II. La calidad</i> . Fidel Lockuán. Purushothama, B. (2013). <i>Wor Textile Industry</i> . Woodhead Publ Damyanov, G. B. (2012). <i>Textile design of experiments</i> . Momentu Brahams, S. B. (2016). <i>The Fun in the Textile Industry</i> . CRC Pres	<i>industria textil</i> y k Quality Mana lishing India PVT e Processes: Qua um Press. damentals of Quass.	y su control de gement in the . Limited. ality control and ality Assurance			





	Group dynamic					
Tittle	Health and safety, protective clothing and risk protection	Duration	45 minutes			
Objectives	To know the most important equipment to be used in the textile industry. To raise awareness in workers, employees and people in general about the importance of being protected and safe in the textile industry.					
	Divide the class into groups of 3 people. Each group is given a paper with a chart with 4 textile machines, equipment, or processes. Inside the chart the teams must write some personal protective equipment to be used in each machine. The moderator will ask group by group to mention the different equipment for each machine.					
Description/content	 Rules: Each group will have equipment in the chart For each correct protereceive 1 point. The tergame. Final discussion to see group's proposals and 	15 min to think ctive equipment am with more po the best option count the points	and write the , the group will wints will win the n among all the (15 min).			
Resources	Paper Pen or pencil					
Bibliography	Not applicable					





	Practical case					
Tittle	Environmental risks	Duration	8 hours			
Objectives	To know the most important environmental risk in the textile industry. Learn different measures that could be taken and processes that could be done to reduce the risks.					
Description/content	Divide the class into groups of 3 people. Each group must think about different environmental risks of some industrial processes that the textile industry has. Each group must think about some risks for one of the following textile industries: yarn production, weaving and knitting, finishing, clothing, etc. Each group will have to prepare a presentation for the next day with no more than 5 slides but not less than 3, explaining at least one risk, why it is produced, the problems that it may generate and how to prevent it.					
Resources	Computer and Internet					
Bibliography	 Blackburn, R. (Ed.). (2009). Sumenvironmental impact. Elsevier. Kant, R. (2011). Textile dyein hazard. Lacasse, K., & Baumann, Wenvironmental data and facts. Media. 	stainable textiles ng industry an V. (2012). <i>Text</i> Springer Scier	s: life cycle and environmental tile Chemicals: nce & Business			





2.3.4 Competence unit 4 - Executing technical sheets

	Case study						
Tittla	Improvement of the technical	Duration	4 hours				
THEIC .	sheet development process						
	Fashion & Skirts, Lt. started	the activity in	2000 and sells				
	personalized shirts for men, w	omen and child	ren through its				
	online store. The consumer can	personalize the	order (choosing				
	the type of fabric, type and co	lour of buttons,	model of cuffs,				
	placket, etc.).						
Description/content	The technical sheet used for the	e articles produc	tion has caused				
	several problems in the company	y, such as insuffic	cient and excess				
	purchase of materials, the cho	pice of incorrect	references (for				
	example, the model has a big b	lue button, but t	hey buy a small				
	ne price of the						
	product, which has caused losses in the company.						
	1. How can the company s	solve the proble	m to have less				
	product returns?						
	2. Indicate the consequences that errors cause in the						
Questions for	allerent productive secto	rs.	ta tha anlina				
reflection		luded in the date	to the online				
	to avoid errors in the tr		formation2 And				
	what would be the procedure for including this						
	information?						
_	Computer.						
Resources	Composition to the internet						
	Connection to the internet.						
Bibliography	Gomes, P. Santos, G. Ferreira,	F.; Carvalho, M	. Blattmann, S.				
Dibliography	(2005). Confec@net – Manual do formando. CITEVE.						





		Group	dynami	C		
Tittle	Technical dynamic	sheets –	puzzle	Duration	50 minutes	
	Identify the	e component	s of a teo	chnical sheet.		
Objectives	Work cooperation, logical thinking and problem-solving skills.					
	Divide the class into groups of 4 eleme Give each group a sheet with the rules objectives of the dynamic. In the center of the room place the different pieces of the puz The group will only have access to each piece after corre- solving a question about this subject. The complete pur represents a technical sheet.					
	Rules: • For each correct question, the group receives one piece of the puzzle.					
	∘ For e	• For each question, the group has 2 possibilities to answer.				
Description/content	• Each	n group has 3	85 minute	es to build the pu	zzle.	
	Suggested questions:					
	Is a sketch of the piece necessary for the creation of a technical sheet?					
	Do you think it's important to have details of the piece design?					
	Would problems be minimized if companies had a technical sheet?					
	Should the technical s	e use of su heet?	stainable	materials be i	ncluded in the	
	Is the tech contributio	nical sheet r n of several	nade by o actors?	one person or is	it built with the	





	Example of a technical sheet to use in the puzzle. The trainer can					
	adapt it.					
		Company:	Reference:			
		Piece:	Collection:			
		Responsible:	Date:			
		Description:				
		Front	Back			
		Raw material:				
		Guidelines for the manufa	acturing process:			
		Product conservation:				
	After 35 the activ	5 minutes, identify the groups that successfully completed ivity.				
	Facilitate	ate reflection on the acquired learning.				
Resources	Paper, p	r, puzzle pieces, questions				
Bibliography	Not app	licable				

Practical case							
7 .1.1	Creation of technical Duratio				8 hours		
little	specifications for the polo shirt						
Objectives	Elaboration of the polo shirt technical sheet.						





Description/content	Divide the class into groups of 4 elements. Give each group the structure of a technical sheet and the objectives of the activity.
	The group will have to fill in all the fields of the technical sheet taking into account the prototype provided.
	The technical sheet must contain all the information necessary for manufacturing the article (sketch of the article, construction specifications, quality specifications, measurement specifications, materials and quantity of materials needed to make the article, samples of materials and accessories).
Resources	Computer. Technical sheet. Prototype. Measuring tape.
	Comes D. Contes C. Ferreiro, E.: Convelhe, M. Blattmann, C.
Bibliography	(2005). Confec@net – Manual do formando. CITEVE.





2.3.5 Competence unit 5 - Performing procedure manuals

Case study		
Tittle	The best work method Duration 3,5 hours	
Description/content	The TShirt4Ever company has 2 lines of t-shirt production. It has an order to produce 2 models with the following common sewing operations: sew collar join shoulders sheathe bottom sheathe sleeves sew seam cover (put necklace) stitch a seam cover (+ brand label) sew sleeves join collar close sides (+ composition label) One of the models has a pocket, so the company wants to implement the best method to perform the "Sew Pocket" operation. In order to critically analyse the work method 2 seamstresses were filmed sewing pockets. When viewing, all information about the methods presented must be registered in the respective "Datasheets on the Material Conditions of the Workstation - DMCW". This information will help us to define the best operative method based on the rules of movement economy.	
Questions for reflection	What is the execution chronological order of the base t-shirt? Before the pocket could be sewed 2 other operations were performed. Which ones?	





	After viewing the videos with 2 different methods:
	Which is the best operative method to sew pockets?
	Is it possible to improve the current method? The group must fill a new DMCW with the proposed/optimized method.
	Objective: To define the best work method through analysis and registration of operating modes.
	Videos of the operation and projection equipment
Resources	Form to define the chronological sequence
	Form to register the current and proposed methods (DMCW)
	Paper, pencil and eraser.
Bibliography	VET provider manuals.

Group dynamic			
Tittle	Create a procedures manual for Clothing	Duration	3,5 hours
Objectives	Identify the main steps of a proc	cedure manual	
	Create a list of the main contents that should integrate a technical procedures manual.		
	Then divide the class into groups of 3 to 4 elements.		
	Divide the contents by groups, according to the example below:		
Description/content	Group 1- Organization and implementation of a production process: Companie's strategic plan; Human resources; Physical and material resources.		
	Group 2- Organization and implementation of a production process: Communication flow; Responsibility and performance.		
	Group 3 - Control systems.		
	Give each group a sheet with dynamic.	the rules and ot	ojectives of the





	The group will have to develop the content, being able to use the supporting documents provided by the trainer and carrying out research work.
	Procedure manuals examples
Resources	Computer
	Internet
Bibliography	

Practical case			
Tittle	The work quantification	Duration	3,5 hours
Objectives	Determine the standard time operation through direct observation	(SAM) of an in ation	dustrial sewing
Description/content	The StayShirt company is dedic that its business model is four important to catalogue all opera file. To rationalize the measurin most representative operations defined. We are going to be component.	ated to shirts pr nded on a mon ations building a ng work of execu for several shi gin our study	oduction. Given o-product, it is standard times ution times, the rt models were with the "cuff"





	Next, we present a video of an operation so you determine its standard time. Measurement is performed with a stopwatch and registered in the "Times Study" form.
	<i>Image of a video on the "cuff sewing" operation</i>
	Note: do not Forget to determine SAM and calculate hourly and daily productions.
	"Times Study" form.
	Video of the operation and projection equipment
Resources	Stopwatch
	Paper, pencil and eraser.
Bibliography	VET provider manuals.





2.3.6 Competence unit 6 - Using pattern making tools (manual and digital)

Case study			
Tittle	The purchase order	Duration	3,5 hours
Description/content	The trainees will perform an analysis of a purchase order and the respective cut order.		
Description/content	The trainees have to confirm if they match, by sizes and colours.		
Questions for	Is the unfolding correct?		
reflection	Was the unfolding made in the most efficient manner?		
Resources	Purchase order.		
	Cut order.		
	Calculator.		
	Paper, pencil and eraser.		
Bibliography	VET provider manuals.		

Group dynamic			
Tittle	The straight grain line	Duration	3,5 hours
Objectives	To be able to define the straight pattern in view of the cutting pla	grain line in orc an.	ler to orient the





Description/content	Patterns to scale $(1/3 \text{ or } 1/4)$ are provided to trainees, some of which without a grain line.		
	They have to make the cutting plan according to the characteristics of the fabric provided (for instance, striped, checkered, printed, in velvet).		
	The trainees are organized in small groups and have to identify the missing straight grain line.		
Resources	Patterns.		
	Fabrics or knits of different characteristics.		
	Paper or CAD to make the plan.		
	Pencil and eraser.		
Bibliography	VET provider manuals.		

Practical case				
Tittle	Switched components manufacturing	during	Duration	3,5 hours
Objectives	To be able to detect size	errors ii	n components.	
Description/content	Two clothing items are proof different sizes. They have to create the items. The aim is to verify which of a different size.	rovided measure of the it	to trainees, havi ements table by ems have switch	ng components measuring the ned components





Resources	Clothing items, half of them not complying in the components' measures.
	Tape measure.
	Measurements table.
	Pencil.
Bibliography	The country's adopted measurements norm (e.g., in Portugal, the NP EN 13402-3:2019).





2.3.7 Competence unit 7 - Operating manufacturing machines

	Case study					
Tittle	Ability to select the tools needed to achieve the objective	Duration	3 hours			
	Remesh is a social enterprise based in Bucharest, Romania. This innovative enterprise collects 20 tones of used advertising banners and meshes per year to transforms them into unique design objects and handmade fashion accessories. Remesh is part of a bigger waste reduction and recycling NGO called 'Workshops without Borders' that started in 2009. In 2012, Remesh was founded to both reuse ad banners and reintroduce marginalized people in the workforce.					
Description/content	The Remesh collection is diverse. From jewels, promotional costumes for concerts, skirts, belts, beach and shopping bags, party clutches, book and laptop covers, to business cards holders, makeup bags, and protective covers for clothes, the list of possibilities seems almost endless. These items are a visual proof of their eco-responsibility.					
	The biggest challenge for comp explaining the cost of their prod to understand why a product material free of charge, can co regular mass production.	banies in the upo uct, because for created out of w st more than one	cycling sector is clients it is hard waste, which is e coming out of			
	1. What design adaptation requestion of manufacturing machines and producing the product?	ires raw waste m how this affects	aterial in terms the time spent			
Questions for reflection	2. There are more tools/techniques/concepts/good practices which are used in designing and producing a textile product. Which do you think was/were applied in the case of upcycling products? Explain your choice.					
	 concepts of circular economy 					





	 techniques of ecologic design 	
	 concepts of sustainable development 	
	 techniques of 3D printing 	
	 top brands good practices 	
Decourses	Computer.	
Kesources	Connection to the internet.	
Bibliography	https://www.remesh.ro/	

	Group dynamic					
Tittle	Follow the steps/procedure Duration 4 hou					
Objectives	Perform the technological oper machines, in compliance with the Compliance of working procedur Work cooperation, logical thinkir	form the technological operations on different production chines, in compliance with the execution technology. npliance of working procedures, time frame. rk cooperation, logical thinking and problem-solving skills. ect a textile product (e.g. dress, pants, EIP/technical				
Description/content	 Select a textile product (e.g. product). Some parts of the prosent of the technological process. Divide the class into 2 working to Rules: The first working teal process for the selecter The second working technological process works using intuition. Each team has to perford different production masselected product. During the dynamic, the time is has finished, discuss the results. 	dress, pants roduct are asser he selected produ eams. am receives the d product. team does no for the selecte orm technologica achines in order t	, EIP/technical mbled and also ct and from the e technological ot receive the d product and al operations on to assemble the r the first team			





	Facilitate reflection on the learning acquired.
	Textile materials.
Resources	Manufacturing machines.
	Technological process.
Bibliography	Not applicable

Practical case						
	Assembly of T-shirt using	Duration	4 hours			
Tittle	different manufacturing					
	machines					
Objectives	Set up the manufacture machine	es and adjust the	e parameters of			
Objectives	use according to the technical sp	pecifications.				
	Divide the class into groups with	iin 3 groups. Giv	e each group			
	the patterns for the T-shirt in or	der to cut the kn	itted fabric.			
	Also, they receive the technolog	ical process for t	he simple T-			
	shirt.					
	Each group will have to assembly its T-shirt using only one					
Description/content	manufacturing machine, as follows:					
	 1st group – Lock stich sewing machine. 					
	 2nd group – 3 threads Overlock sewing machine. 					
	\circ 3rd group - 5 threads Overlock sewing machine.					
	After all teams have finished, dis	scuss the results	in terms of			
	fabric behavior, production time	, quality.				
	Knitted fabric.					
_	Patterns.					
Resources	Technological process.					
	Lock stich sewing machine.					





	3 threads Overlock sewing machine.
	5 threads Overlock sewing machine.
Bibliography	Not applicable



2.3.8 Competence unit 8 - Undertaking the finishing of garments and accessories

TittleDiscover the advantages of latest finishing technologyDuration2 hoursJeanologia: Leaders in textile technologyJeanologia: Leaders in textile technologySince 1993 their mission has been to create an ethical, sustainable and eco-efficient textile and apparel industry through their disruptive technology and know-how. Their laser, G2 ozone and e-flow system have revolutionized the textile industry. For the last 5 years Jeanologia has focused on innovative solutions to eliminate the polluting processes in jean finishing, developing solutions that have allowed the elimination of PP spray or manual scraping in the textile industry. Now they go a step further, simplifying the way of designing, creating a common language in the industry, saving the designers time (reduces the marking times up to 30%), boosting creativity and avoiding second- qualities.https://www.youtube.com/watch?v=pPKL nrpRAQ&t=28s The biggest market brands, such as Levi's, Polo Jeans, Abercrombie&Fitch, Edwin Japan, Pepe Jeans, Diesel, Tommy Hilfiger, CK, Jack & Jones, Replay, and other large retailers, such as GAP, Uniqlo, M&S and H&M, among others, place their confidence in Jeanologia, using technology developed by the company.Questions for reflection1. What are the advantages offered by the latest finishing technology for jeans?2. What manual operations are eliminated by this latest technology?		Case study
Indexlatest finishing technologyJeanologia: Leaders in textile technologySince 1993 their mission has been to create an ethical, sustainable and eco-efficient textile and apparel industry through their disruptive technology and know-how. Their laser, G2 ozone and e-flow system have revolutionized the textile industry. For the last 5 years Jeanologia has focused on innovative solutions to eliminate the polluting processes in jean finishing, developing solutions that have allowed the elimination of PP spray or manual scraping in the textile industry. Now they go a step further, simplifying the way of designing, creating a common language in the industry, saving the designers time (reduces the marking times up to 30%), boosting creativity and avoiding second- qualities. https://www.youtube.com/watch?v=pPKL nrpRAQ&t=28s The biggest market brands, such as Levi's, Polo Jeans, Abercrombie&Fitch, Edwin Japan, Pepe Jeans, Diesel, Tommy Hilfiger, CK, Jack & Jones, Replay, and other large retailers, such as GAP, Uniqlo, M&S and H&M, among others, place their confidence in Jeanologia, using technology developed by the company.Questions for reflection1. What are the advantages offered by the latest finishing technology for jeans? 2. What manual operations are eliminated by this latest technology?	Tittla	Discover the advantages of Duration 2 hours
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	Questions for reflection	 What are the advantages offered by the latest finishing technology for jeans? What manual operations are eliminated by this latest technology?





5	Computer.
Resources	Connection to the internet.
Bibliography	https://www.jeanologia.com/

	Group dynamic					
Tittle	Finishing operations – Mosaic Duration 45 minutes dynamics					
Ohiectives	Identify the finishing operations and their order in the technological flow.					
objectives	Improving communication in the work team to achieve a goal.					
	Building a mosaic in group.					
	Before the dynamic, the animator gathers the names of all the					
	finishing operations necessary to achieve a technological flow,					
	on sticky notes (e.g. threads cutting, steaming, polishing,					
	ironing, labelling, packaging, etc.). The animator mixes the					
	letters in the name of each operation in such way that it is					
	possible to pronounce them (ex: ironing - nigorin). After that,					
	the sticky notes in different colors with the new names of the					
	operations are prepared. All the sticky notes are fixed on the					
	board and covered with paper.					
	The animator divides the class into 4 groups.					
Description/content	Rules:					
	 The sticky notes are discovered and the groups have to find the names of the operations on the board. 					
	\circ The names of the operations should be arranged in their					
	order in the technological flow.					
	 Each group has 20 minutes to find operations names. 					
	After 20 minutes, identify the groups that successfully found the					
	biggest number of operation names and arranged them correctly.					
	Facilitate reflection on the learning acquired.					
Resources	Sticky notes, paper, a blackboard, markers					





Bibliography

Not applicable

		Prac	ctical case			
	Identify	the	finishing	Duration	4 hours	
Tittle	operations	/paramete	rs for			
	different p	roducts				
Objectives	Finish dif parameter	ferent pro rs of the ma	ducts in and the second	compliance wit the requirements	h the specific s of the model.	
	Divide the	class into	groups of	4 elements. Give	to each group	
	different p	products fro	om differer	nt materials (blo	use for knitted	
	fabric and	woven fab	ric, and fro	m different raw	materials, e.g.,	
	cotton, silk, wool, linen, synthetic fibers like polyester; overall					
	for nonwoven fabric).					
Description/content	Each group will finish (threads cleaning, ironing, packaging) the					
	ivening temperature					
	 ironing temperature 					
	 ume or misning 					
	 operations applied 					
	 fabric behavior 					
	 relaxing time of the fabric after ironing. 					
_	Products.					
Resources	Equipment	t for finishir	ng.			
Bibliography	Not applic	able				



2.3.9 Competence unit 9 - Using quality and technical standards

Case study						
	Identification	of	non-	Duration	3 hours	
Tittle	conformities.	Corrective	and			
	preventive acti	ions.				
Description/content	In a knitting department: the clients notice the existence of non- conformities on the products delivered. The factory sets up an internal audit. The identified problems and potential causes are analyzed. Non-conformities reports are elaborated; preventive and corrective actions are identified. The audit team periodically evaluates the efficiency of these actions and periodically presents the monitoring reports to the company's management team.					
Questions for reflection	 What and What and What and How is internal 	e the main e the poten the contin audits?	noncor tial cau uous i	nformities identif uses? mprovement ac	ied? hieved through	
Resources	Computers. Noncompliance reports. Specialized personnel in implementing the quality management system.					
Bibliography	ISO 9001:201 ISO 19011:20	5 – Quality 18 – Guidel	manag ines fo	ement systems r auditing manag	jement	

Group dynamic						
	Implementati	ion	of	an	Duration	3 hours
Tittle	algorithm	for	continu	ous		
	improvement	:				





Objectives	Analyse the production process.
	Apply technical standards.
	Identify the problems regarding technical norms.
	Apply the standards and quality parameters.
	Identify the problems regarding quality standards.
	Propose measures for continuous quality improvement.
Description/content	The class is divided into 2 working groups.
	Rules:
	One group will analyse the knitting production line. The other group will analyse the sewing production line.
	Each team will:
	 Identify a problem in the production process. Identify the causes of the problem. Identify the potential solutions and the way to evaluate them. Clarify the way to implement the proper solution in order to prevent the recurrence of the problem. Identify the way to standardize the new solution. Evaluate the efficiency of the improvements made. Propose solutions to adapt the improvement process in the entire activity of the company.
	Each group will assign a leader who will present the results of the group.
	At the end of the dynamic, there are debates among the working groups regarding the results achieved.
Resources	Laptop, video projector.
Bibliography	ISO 9001:2015 – Quality management systems
	ISO 19011:2018 – Guidelines for auditing management





Practical case		
Tittle	Elaboration of procedures on Duration 4 hours	
	manufacturing phases	
Objectives	Elaboration of the procedure's structure.	
	The analysis, the approval and the dissemination of the procedures.	
Description/content	It is presented the structure of a procedure and the differences	
	between procedures and guidelines/instructions.	
	It is presented the PDCA cycle: Plan, Do, Check, Act.	
	The class is divided into 3 working groups.	
	Rules:	
	• Each team has received a different production phase.	
	$_{ m o}$ Each team has to elaborate a procedure for the	
	manufacturing phase received.	
	After finalizing the exercise, the class will discuss the results and	
	make the necessary improvements on the elaborated	
	procedures.	
Resources	Flipchart, office supplies, laptop, video projector.	
Bibliography	ISO 9001:2015 – Quality management systems	



3 Conclusions

This Training Package aims to ensure a common understanding of the Clothing Technician Profile and Qualification implementation.

Within this understanding, much more can and will be done, by all skateholders involved, in order to further develop methodologies and guarantee an efective and enticing learning pathway for this professional profile and qualification.

Today's knowledge-based society, where intellectual capital is an organization's most competitive asset, learning is serious business. (Davis, 1998)

In this Training Package VET providers and trainers can find teaching/training methodologies to offer their students/trainees an educational experience that encourages all those future professionals to already explore and discover their true potential.





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www.clothingtechnician.eu

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