FACTIVE Handbook Summary – Guidelines and Toolkit

FACTIVE
Flipped classroom training Approach for Clothing
and Textile Innovative VET Education
2020-1-PT01-KA202-078344

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PREFACE

Flipped Classroom pedagogy emphasizes on learning activities that promote critical thinking and student motivation. By promoting greater student-teacher interaction in class time it provides an opportunity for discussions and group work that enable students gaining experience in collaboration and expertise in content.

We often hear or read that "*textile is everywhere*" and "*goes everywhere*", the textile and clothing (T&C) sector has the capacity to reinvent itself and reach other sectors of activities, such as health and habitat, offering new solutions, increasingly sustainable and with a necessary focus on the circular economy.

In addition to this growth, there is a reality that has been challenging companies, technological centres, vocational and educative training entities, higher education, associations, among other stakeholders: the lack of qualified workforce and the difficulty in attracting young people and retaining talent.

The lack of training and rejuvenation of staff is crucial for the sector to expand and to enable investments.

The FACTIVE project consortium has created a set of instruments that aim to enhance the training dynamics through the Flipped Classroom model, considered as one of the latest pedagogical models that has the potential to change the current traditional way of teaching.

This document is a summary of the FACTIVE Handbook – Guidelines and Toolkit document, in which we highlight the resources and tools you can use in the Flipped Classroom methodology.

This document allows you to get acquainted, in your own language, with the principles of the FACTIVE training method and of how it can be put into practice. In this sense we tried to make a selection of headlines from the actual handbook.

For a deeper knowledge, we invite you to read the complete handbook which is the result of the IO4 - **FACTIVE Handbook**.

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1. FACTIVE HANDBOOK – PEDAGOGICAL TECHNIQUES

In the following table, you can see a list of different *Pedagogical Techniques* that can be applied in the FACTIVE Methodology, both face-to-face and adapted to online learning approach. These techniques will all have their role and value within the active teaching/learning process. It may be useful to design different combinations of pedagogical interventions.

Pedagogical Technique	Core element
Exposure/Lecture	The lecture is the one-way teaching method that relies on the trainer's ability to present the information.
Demonstration	The trainer imparts knowledge by demonstrating how it is done
Role-playing	The ability to put oneself in the other's place and introspection is worked on.
Guided Discussion	Active and participatory learning through dialogue to support the transfer of knowledge.
Simulation (Virtual Reality)	Represents a replica or mimics of real events.
Imagetics	Visualization of images related to the information to be learned.
Brainstorming	All ideas are welcome in order to find an effective method of solving a problem.
Case Study Analysis	Trainees are confronted with a real or fictional scenario and must analyse the situation and reach a solution.
Collaborative Learning (Buzzgroup)	Trainees share responsibilities and are dependent on each other in achieving a specific task.
Games	Rule-driven activities based on competitive situations.
Study Visits	Field trips are a way for trainees to get to know new realities and perspectives, in order to consolidate knowledge.
Critical Incident	Trainees are given a short description of a problem situation and are asked to suggest a solution

Table 1- Pedagogical Techniques

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2. THE FACTIVE METHODOLOGY AS A PEDAGOGICAL STRATEGY

The FACTIVE Methodology concept consists in an organised combination of pedagogical methods, pedagogical techniques, and didactic resources. Their implementation varies according to the desired objectives and presupposes effective and careful planning, which takes into consideration the individual characteristics of the learners, as well as the learning rhythms of each one.

In the table below are some suggestions of pedagogical activities organised by the different educational areas and according to the teaching resources needed to carry them out.
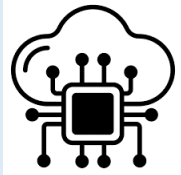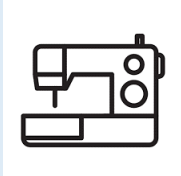
Educational Activities Area	Activity Examples
Technological	Computer assisted instruction
	Games
	Gamification
	Simulation
Intellectual	Lecture
	Forming questions, answering questions
	Problem solving
	Case Study
	Problem-based activities
	Role-modelling
	Stimulus-based training
	Role play
	Socratic seminar method
Professional	Tutoring
	Moderating discussions
	Encouraging self-initiative and inquiry
	Job shadowing
	Mentoring and apprenticeship
	Internship
	Job rotation
Student collaboration	Pairs and small groups guided with questions
	Pairs and small groups guided with a set of instructions
	Pairs, small groups and the whole class creating new material
	Team-training / Collaborative learning

Table 1- Pedagogical Activities

3. FACTIVE TRAINERS' PROFILE

Over the last century, continuous changes and advances in science and technology have dramatically altered expectations and requirements in many professional fields, and textiles, clothing and fashion are no exception. While in the last century it was acceptable and sufficient for individuals to have certain knowledge and skills, the 21st century has required individuals to go further and acquire new skills to keep up with changes in both work and daily life. Several institutions, organisations and scholars have worked to identify the key competencies of the 21st century, resulting in a framework focused on a total of 12 skills, divided into three main areas, the so-called 21st Century Skills, that today's workers and students need to succeed in their careers:
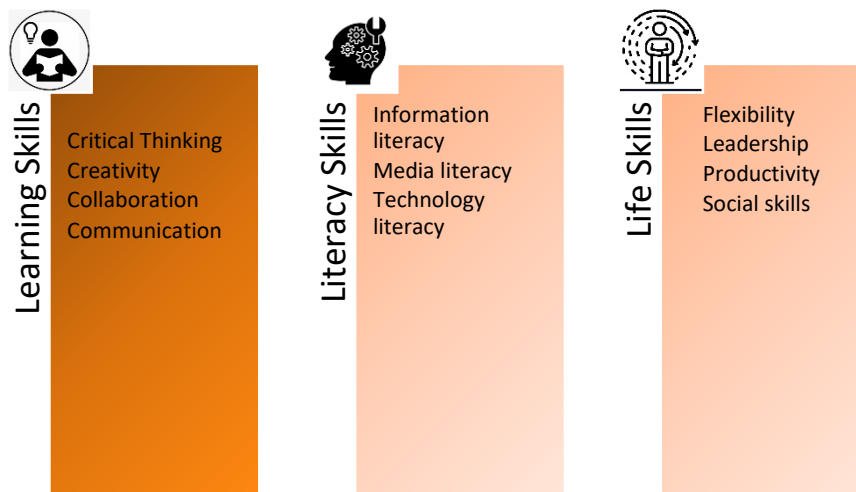
Learning Skills	Literacy Skills	Life Skills
Critical Thinking Creativity Collaboration Communication	Information literacy Media literacy Technology literacy	Flexibility Leadership Productivity Social skills

Figure 1- 21st Century Skills

The Factive Trainer has to be a multitasking professional, who must simultaneously mobilize skills from the areas of psychology, sociology, pedagogy, management, marketing, among other sciences.

He/she is the professional who should be able to establish a positive and effective pedagogical relationship that promotes and facilitates learning, contributing to the development of competencies foreseen in the pre-defined reference, mobilizing the necessary knowledge and skills according to the specific situations and groups, in a socially and ethically situated practice.

In any training context, the Factive Trainer's main responsibilities are to create a good climate in the training context, to involve the learners and support them in planning their training, in diagnosing their learning needs, in formulating their objectives, in drawing up plans to achieve them, in implementing those plans, and in evaluating the learning, practices which will finally take the form of learning (or training) contracts.

The lesson plan is a Trainer's management tool which serves as a guide and support for the effective and efficient development of training.

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To create a lesson plan it is essential that the trainer first understands who the target audience is, i.e. who the training is aimed at.

Depending on the age, expectations regarding the learning process are different. We can't say that there is a "right" or a "wrong" method for the learning process. There are several methods and techniques that combined allow us to design a lesson plan aligned with the expectations of all the intervenients.

The following is a case study and an example of a completed session plan. In the FACTIVE Handbook we provide an example of session plans for each unit of competency. So, to get a deeper understanding of how to implement the MOOC contents in a Flipped Classroom approach we suggest exploring the document in detail.

FACTIVE Lesson Plan Design – Example with MOOC's contents

Date: xx/xx/xxxx	Learning Unit No. #2 - *Sustainability scope*	Session No. #2 - *Sustainable practices in the T&C industry*
Target Audience: T&C Employees (Maria)	Session Mode: B-learning	Time: 60' + 90'
Programmatic Content: - Sustainable practices, challenges and solutions in the T&C industry. - Sustainable economic solutions and best practices. - Sustainable environmental solutions and environmental sustainability best practices. - Sustainable social solutions and Social sustainability best practices. - Overall corporate sustainability initiatives.		Didactic Resources: MOOC. Microsoft Teams. Google Forms. Computers. Digital Tools: *Mindmaster, Picture Note, Kahoot! Mentimeter.* Worksheets – *Liveworksheets.*

Pedagogical Objectives:
- At the end of the online session, the trainees must be able to identify some sustainable practices, challenges and solutions in the T&C industry.
- In small groups, they must also be able to prepare and present one case of:
    o sustainable economic solutions and best practices.
    o sustainable environmental solutions and environmental sustainability best practices.
    o sustainable social solutions and Social sustainability best practices (one theme per group).
- They must be able to identify overall corporate sustainability initiatives.		

Pedagogical Techniques /Activities:		
Introduction: Refresh of the previous session (*Interrogative Method – Questions' Technique*). *Brainstorming* (*Interrogative and Active Method*).	On Going: Worksheet's filling (*Active Method*). Video lesson reviewing accompanied by questions (*Expositive and Interrogative Method*).	Conclusion: Summary (*Expositive Method*). Assessment activities (*Interrogative Method*).

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	Study cases brief analysis (*Active Method*).	Distribution of homework assignments (*Expositive Method*).

Assessment:
Mentimeter - Formative evaluation (*Reaction* and *Learning Assessment Levels*).
Test of learning evaluation – *Kahoot! (Learning Assessment Level).*
Session satisfaction survey (Google Forms) - *What did you enjoy the most and what can we do better*? (*Reaction Assessment Levels*).
Further evaluation of presentation of each peer group (homework for presentation at the next session) – observation scales - (*Learning and Behaviour Assessment Levels*).

Observations:
The tasks to be requested at the end of the session are already defined by the Trainer and will be shared during the session and later on the Forum on the platform.
In this session pedagogical activities are included "in-class activities" and "home activities" also.

Plan Support
It works as a mini checklist to guide the Trainer in his work and to guide his Trainees in their tasks.

Who Does What and When?	*Before Class (Home Activities)*	*During Class (In-Class Activities)*	*After Class (Home Activities)*
Trainer	Prepared the required learning resources and made them available, as well the assessment instruments. Organised all the information it has about the profile of its Trainees and the course.	Streamlines the planned pedagogical activities. Guides the trainees to carry out the pedagogical activities. Promotes Feedback moments. Tutoring.	Provides guidance for after-school assignments. Prepares the next lesson.
Trainee	Watched the recorded lesson. Taked notes - *Picture Note.* Made mind maps – *MindMaster.* Organised questions.	Takes notes. Collaborates in Pedagogical Activities. Shares Experiences and Questions. Present their homework. Promotes reflection among themselves/form questions.	Prepares and share ideas (Forum). Organizes tasks and resources. Researches. Organizes, processes and compiles information. Studies.

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4. PROCEDURES OF EVALUATION AND MONITORING FOR APPLICATION OF THE FACTIVE TRAINING TOOLKIT

4.1. Previous Knowledge Assessment

When introducing a new topic, it is always advisable to check the students' previous knowledge, so that the learner is aware of his or her prior familiarity with the subject the teacher brings up and what he or she needs to learn in order to reach the lesson's learning objectives. This practice is also valuable for the teacher, as he or she gets an idea of the class' motivation and preparation towards the topic and will be able to adapt the contents of the unit to reinforce the knowledge gaps.

For this previous knowledge assessment, we recommend two types of activities depending on the level, professional expertise and maturity of the students we work with. When teaching adults within their workplace or through online learning a more traditional and straightforward approach could be used, such as a chart where students record their level of understanding and experience on each subject that will be taught during the unit. If we are working with younger students in a class environment it is a good idea to use more dynamic and participative activities, such as some *Thinking Routines.* These exercises were developed by Project Zero at Harvard University School of Education as a part of their research on Visible Thinking. They are simple activities that can help make thinking visible.

The proposed *Thinking Routines* to assess students' previous knowledge are "*See, Think, Wonder*", "*Chalk talk*" and "*3,2,1, Bridge*". Here is a description of each activity and an example if needed.

See, Think, Wonder

This activity consists of reading a sentence, text, looking at an image, watching a video or listening to a sound that introduces the new topic to be worked on and that students ask themselves individually what it suggests to them. Each student has to fill the following table:

See *What do you see?*	**Think** *What do you think is going on?*	**Wonder** *What does it make you wonder?*

By filling this table, the student has to think about what they know about this topic, thoughts they have about it and wonder and ask questions.

After filling the table in, the students share their thoughts with the rest of the class and the teacher writes the main ideas on the board. The teacher can also say which of these thoughts/questions will be answered in the unit, but always without judging. By doing this exercise, the teacher has an idea of the previous knowledge the students bring to the unit and the students have a wider vision of what they are going to learn.

Chalk talk

This thinking routine gives students the opportunity to put into words their knowledge and thinking on the proposed subject at the same time that encourages them to consider others'

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viewpoints. It is a written activity that can be carried out within small groups, so it can help shy learners to express themselves.

The teacher organizes the class with groups of 4 students (approximately) and gives each group a big sheet of paper with a starting word, phrase or question written on it. Each student has a pen or a marker; they will use different colours to make sure every learner participates in the activity. The teacher asks students to write down on the paper the answers to the following questions:

- What ideas do you have/what do you know about this topic?
- What do you think about other people's ideas?
- What questions come up as you think about all of these?

Students will answer the questions and discuss the topic within their small group, meanwhile the teacher walks around the class helping quieter groups or learners, suggesting ideas and encouraging them when they get stuck.

After making sure that all students have participated the teacher collects the papers, puts them on the board and learners have a look at the other groups' work. Later on the whole class can debate on the topic and the ideas that arose.

3,2,1, Bridge

This activity is recommended during the previous knowledge assessment and as a self-evaluation activity. It consists of two parts. The first part is done before explaining the new topic, during the previous knowledge assessment. After introducing the title or key word of the new topic, the student thinks of 3 words, 2 questions and an image or analogy that comes to mind when hearing about this new topic. After the unit has been completed, the students repeat the steps of the routine (3 words, 2 questions, 1 image). The bridge is the students' reflection on what they have learned and how it has changed their vision.

Before Learning	After Learning
3 Words/Ideas	3 Words/Ideas
2 Questions	2 Questions
1 Image or Metaphor	1 Image or Metaphor
Bridge Explain how your new responses connect to or changed from your initial responses.	

The students share their words, questions and images/metaphors with the rest of the class and the teacher collects the main ideas on the board. In this exercise, maybe some of the words or images may be repeated. By doing this exercise, the teacher has an idea of the previous

knowledge the students bring to the unit and the students have a wider vision of what they are going to learn.

After the unit is completed, the students fill the "After Learning" column. By doing this they become more conscious of their learning process and it could also be used as a self-assessment activity.

4.2. Intermediate Assessment

Speaking about the learning progress is not the same as grading students. Evaluation of the learning progress gives students constant opportunities for improvement. If students do not comprehend something or make a mistake, avoid labelling. Introduce a different learning strategy instead and present them more learning opportunities. By doing so a teacher promotes the growth mindset among students. Students with a growth mindset seek out better feedback, persist for longer, cope better with transitions and develop better self-regulation.

Let's have a look at a few approaches towards intermediate assessment:

● **Providing intrinsic additionally to extrinsic rewards**

Students sometimes possess intrinsic motivation in which they receive pleasure from the learning process itself without the need for a reward. Cognitive evaluation theory supports this experience by stating that external (extrinsic) reward decreases internal (intrinsic) motivation. Rewards and punishments can induce negative thinking or give rise to cheating.

● **Students creating their own tests**

Students enjoy the challenge of creating their own tests. Motivation increases when students are given more control, and this increased motivation can, in turn, promote a growth mindset

● **Working with students to eliminate the fear of guessing and help them become comfortable to start again**

Work with students to eliminate the fear of guessing and help them become comfortable starting again if their process is not progressing.

● **Setting high goals and staying persistent in evaluating them**

Set high goals and be clear in how they are going to be assessed. Help students in overcoming the obstacles in achieving high goals. Be persistent in evaluating the goals (do not accept lower standards. Students possess pride in their accomplishment of a difficult task.

● **Gamification tools used for evaluation**

The methods and tools used for evaluating students vary from the traditional to newer and more modern methods. However, one does not have to negate the other. Gamification is the use of game elements and game-design techniques in non-game context.

A traditional method can be modernized through the tools used, for example instead of creating a traditionally designed multiple-choice exam, the teacher can provide the multiple-choice

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method through a game, where the image and the sequence of the exam become a game. Through gamification the teacher can have a positive impact on students' motivation. By designing the rewards system properly, the engagement of students is increased and both parties are "rewarded" from the process.

Through gamified processed evaluations, there are several elements that are elaborated. As stated before, motivation and engagement are enhanced, alongside competition, collaboration between students, making choices, calculating economics for the final game reward, etc.

Previous studies of gamification in Higher Education Institutes have shown that the use of game elements has achieved promising results and can be appealing for new generations of students, which are no other than the digital natives, who have a high level of familiarity with games and are open to the concept of learning from it.

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5. FACTIVE CHECKLISTS SUPPORT KIT

There are checklists that will support the evaluation of the trainer's work/performance and others that will help to evaluate the trainees' performance and involvement before, during and after the training sessions.

We close this document with a checklist that helps trainees, the actual target group, to understand if they have been able to touch essential points of the different phases/sessions associated with the training they are involved in, according to the objectives defined by the trainer, at different stages of the training (inside and outside the training session).

They create openness for reflection on possible improvements that could be implemented, or aspects that have already been highlighted but could be further improved to provide a better performance.

	Improvements by the Trainee's Eyes
Preparation phase	
● Listen and discuss	
● Organise themselves for the activities to be done	
● Start brainstorming	
● Exhibit enthusiasm about the topic	
● Make questions	
Home session	
● Work individually / in teams at home	
● Explore the resources suggested by the teacher	
● Research and collect resources	
● Take notes to brainstorm in the classroom	
Class session	
● Share resources and observations with classmates	
● Analyse and record comments on the findings	
● Work collaboratively creating mind map and/or other summarising products	
● Analyse issues through direct collaborative experience	
● Share ideas with the others about what they have learned	
● Share video/documents/presentations with other students	

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