DIGIGREEN

IMPROVED WORKFORCE TO SET TRANSITION FROM MANUFACTURING TO DIGITAL GREEN FABRICATION

Project Number: 2021-1-RO01-KA220-VET-000028028

1ST NEWSLETTER (MAY 2023)

"Digital transformation is the continuous process by which enterprises adapt to or drive disruptive changes in their customers and markets (external ecosystem) by leveraging digital competencies to create new business models, products, and services. It enables enterprises to seamlessly blend digital, physical business and customer experiences while improving operational efficiencies and organizational performance."

The project **DIGIGREEN** has two distinct connections to innovation:

1. It proposes innovating system for training, consisting of mix of two types of very short sessions of training, micro-courses, and webinars, both with different methodologies of implementation, and involving digital tools for different sequences of the sessions
2. It proposes solution for the innovation process in manufacturing, which is the transformation from traditional manufacturing to digital and green manufacturing

Related the two distinct connections it means that the proposed activities cover:

A. Digital literacy
B. Transformation to digital
C. Transformation to green of manufacturing means an innovating approach of the training objectives

The training creates, at the same time, competences related to digital, competences related to the technological transformation from the analogic implementation to digital implementation, and transformation from pollutant processes to green processes (low carbon prints and eco-labelling of the manufacturing and products). The innovation comes from the mix of the three, which solves large problems of the actual manufacturing systems that tries to get improved to the characteristics defined by the Industry 4.0 revolution. To apply such kind of training, a provider of training services should have trainers with appropriate competences, so the trainers should improve their knowledge and skills related to digital transformation and, subsequently, related to the technical aspects that go from traditional to advanced (we will call them here as „white trainees"). They should be able to train the experts and specialists of the companies, who will be involved in the direct replacing of the old technologies with the new ones, to replace the old equipment with the new, digital ones (we will call them here as „blue trainees").

Addressing digital transformation Most of the companies using the 7P most used manufacturing processes (Machining, Forming, Joining, Injection moulding, Additive manufacturing, Surface conditioning, Information circulation) are trying to step to the next level by changing their traditional technologies and analogic or partial digital equipment to advanced technologies applied in digital conditions, accessing information by cloud computing, and applying automatic corrections. To make such step the companies need personnel who have at least the very basic competences related to understanding the data, the computing, the digital control, to be able to operate the new digital equipment. DIGIGREEN proposes a two step of digital competences acquiring: first a short digital literacy and second one digital technology. Increasing the flexibility of opportunities in VET Approaching the entire set of 7P most used manufacturing processes, a trainee who passes the assessment requirements after the training will be able to work in many positions inside a factory, and to work in many factories from the industrial sectors. That gives high flexibility to the opportunities in VET. In the same time, the new frame of training is applicable to the trainers and to the industrial experts.

DIGIGREEN Project

Methodologies for the Digital Training and Assessment

Digital and Green transformation is one of the major trends that is affecting the economy and society. The work developed under this IO allowed to tackle this thematic developing a new frame of training and assessment to convert personnel from traditional to digital manufacturing. The proposed methodology was based on the analysis of 67 answers received from two sets of questionnaires sent to different companies.

From the analysis of the questionnaires, it was found that the training and teaching in digital and green manufacturing is seen as an urgent need, despite involving an effort both personal and financial, on the part of companies. Given the lack of time for reskilling courses should be given in a hybrid way, both online and presential and with short duration. When given physically, most of the "workers" agreed that the training should be given inside the company, that is work-based learning with the involvement of teachers/trainers coming from training provider centres or other institutions or universities, companies, in its design and delivery. If the courses are given online, they can be given through platforms such as Microsoft teams and zoom, or using social networks, to transmit/spread simple, important, and appealing contents, such as LinkedIn, Facebook and even WhatsApp.

Based on questionnaires results and considering a research and discussion made by all partners, a micro-learning and webinar structure /framework was proposed, as well a general entry requirement. A more detailed specification of the micro-learning framework, structure, content, and entry requirements will be made in PR2.

Training and Assessment Frame Design

A new design for the frame of training and assessment, along with a guideline to be followed by all specialists from industry who are involved in the transformation of their manufacturing system to a digital and green manufacturing is one of the goals in DIGIGREEN.
The first step is to identify the knowledge and skill gaps of workers involved in the transformation process. This was done through a thorough assessment of their current knowledge and skills, as well as their job roles and responsibilities.
A matrix with key findings coming from the questionnaires in Project Result 1 was essential, it gave the partnership guidance to start sketching the frame design, with inputs regarding the duration or delivery.
The training structure is organized in a modular approach, made of a general content in Digital and Green Competences for both Basic and Comprehensive level, corresponding to EQF from Basic to Level 4 (Blue collar workers) and Level 5 to 7 (White collar workers).
The course/curriculum for digital and green skills development is organized according to three Competence Units (CU) / Units of Learning Outcomes (ULOs), and it crosses Digital transformation in fabrication and logistics; Greening fabrication and Transversal/Soft Skills.
The training modules cover the key concepts required for digital and green manufacturing, for white collars and blue collars workers, identifying each Knowledge, Skills and Autonomy and Responsibility.
Having in mind the revolution 4.0 in industry, the need of having agile and flexible learning solutions became a priority but keeping the quality standards.
But, how can industry go thru the revolution, while keeping the quality standards and low impact on daily routines? Training providers need to adapt and offer effective solutions with low impact in industry. To have the training structured in micro credentials was identified as a possible solution for this challenge. Micro credentials are being raised by the European Commission.

COMPETENCE UNITS / UNITS OF LOs	RECOMMENDED CONTACT HOURS*	
CU SUBJECT TITLE	WHITE COLLARS	BLUE COLLARS
	Comprehensive	Basic
CU DO1. Digital transformation in fabrication and logistics.	14	10.5
CU DO2. Greening fabrication	14	10.5
CU DO3. Transversal / Soft Skills	0	3.5
Total	28	24.5

The growing number of people needing to update and improve their knowledge, skills and competences to fill the gap between their formal education and training and the needs of a fast-changing society and labour market is imminent.
Also, education and training systems are being called to become more flexible and to find solutions to deliver more learner-centred, accessible and inclusive learning to a wider range of profiles.
A micro credentials is defined as a proof of the learning outcomes that a learner has acquired following a short learning experience. These learning outcomes have been assessed against transparent standards. Also, micro credentials are owned by the learner, can be shared, are portable and may be combined into larger credentials or qualifications. (European Commission 2020).
Wille increasing lifelong learning, allowing companies and workers to keep up with digital and green trends in the fabrication and logistic process was the starting point for this training and assessment frame design.
Digital and green manufacturing requires a shift in mindset and approach, industry should be open to change and willing to adapt to new ways of working. For training providers, this is an evolving field. Stay up-to-date with industry trends and advancements to ensure that the knowledge and skills remain relevant and effective for industry and workers.

DIGIGREEN NEXT PROJECT EVENTS

MAY 2023:

- Timisoara (Romania)
- Transnational Project Meeting (22/05 - 23/05)
- Learning and Teaching Activity - How to train on topic related to changing the manufacturing to digital and green? (24/05 - 26/05)

DIGIGREEN PROJECT PARTNERS

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