

O2-R3: Restart Toolbox test

Spain - National report

EVM & Somorrostro



Co-funded by the
Erasmus+ Programme
of the European Union

PROJECT:

Restart - Digital Training Toolbox to Foster
EU'S IndusTry 4.0 RevoluTion

www.restart-project.eu

Document Metadata

Project	Restart - Digital Training Toolbox to Foster EU'S Industry 4.0 Revolution Project No. 2017-1-ES01-KA202-038446
Title of the document	Training Needs Report –RESTART Partnership Survey of 4.0 Digital Technologies
Elaborated by	EVM and Somorrostro
Activity / Intellectual Output	Activity 3/Output 2
Deliverable number	O2-R3
Dissemination level	General
Date of the document	December 2019
File name	O2-R3_RESTART_PILOT TEST_National_Report_Spain

Legal notice: This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Contents

1. Introduction: Description of the activity	4
1.1. Description of the Test in Tenerife.	4
1.1.1. Presentation of the views/opinions of all participants & stakeholders	9
1.1.2. Main findings from the focus group: participant's feedback.....	15
1.2. Description of the test in the Basque Country.....	16
1.2.1. Presentation of the views/opinions of all participants & stakeholders	17
1.2.2. Main findings from the focus group: participant's feedback.....	18
2. Conclusions and recommendations for the final Toolbox	18

1. Introduction: Description of the activity

The Spanish partners of the RESTART Project, Ecosistemas Virtuales y Modulares, SL y Centro de Formación Somorrostro, carried out, in Spain, the Test of the Training Toolbox developed by RESTART. After the accommodation of the original contents, a training content adapted to the local contexts was proposed. The result was the specific training course called *Habilidades Digitales en la Industria 4.0*.

In Spain, the RESTART test was divided into two, one conducted in the Canary Islands, organized by EVM, and the other conducted in the Basque Country by Somorrostro.

1.1. Description of the Test in Tenerife.

The training course had a total duration of 40 hours, 15 hours of classroom training and 24 hours of online training, through an e-learning platform enabled by EVM.

The training took place between November 8 and December 4, 2019. The face-to-face sessions were held at the facilities of Fundación Empresa of the University of La Laguna.

By utilizing the RESTART Toolbox, the course contents were deployed, in Tenerife, as follows:

Topic	Modality	Total Hours
Introducción a la industria 4.0	F2F	3
Gestión de la producción	F2F	2
Tecnologías para el diseño y fabricación de productos: CAD	online	4
Tecnologías para el diseño y fabricación de productos: Ingeniería inversa e impresión 3D	online	4
Tecnologías para el diseño y fabricación de productos: CNC	online	3
Cloud Computing	online	6
Herramientas de la Factoría Digital	F2F	2
Implementando la Factoría Digital	online	2
Introducción al comercio electrónico	F2F	5
Liderazgo Digital	F2F	3
Big Data	online	4

Industrial Security	online	2
	Total:	40

During the registration period, 20 people signed up and a total number of nine actively participated in the course and completed all the modules as well as the evaluations. The 9 people who completed the course were awarded the corresponding certificate by the RESTART Consortium. The objective in terms of participants in the Tenerife Test was to train 8 people, which means that it was achieved.

Participants to the training pilot Test can be seen in FIGURE 1 and FIGURE 3



FIGURE 1: SESSION IN TENERIFE



FIGURE 2: SESSION IN TENERIFE



FIGURE 3: SESSION IN TENERIFE

The below is a discussion of the results from the pre-assessment questionnaires used for the Evaluation of the pilot Test:

As can be seen from Figure below (FIGURE 4), most participants (90%), were university students in STEM courses, in particular students in the field of industrial engineering (70%), which made it possible to contrast the training contents created within the partnership with people who are currently being trained to work in the industrial sector.

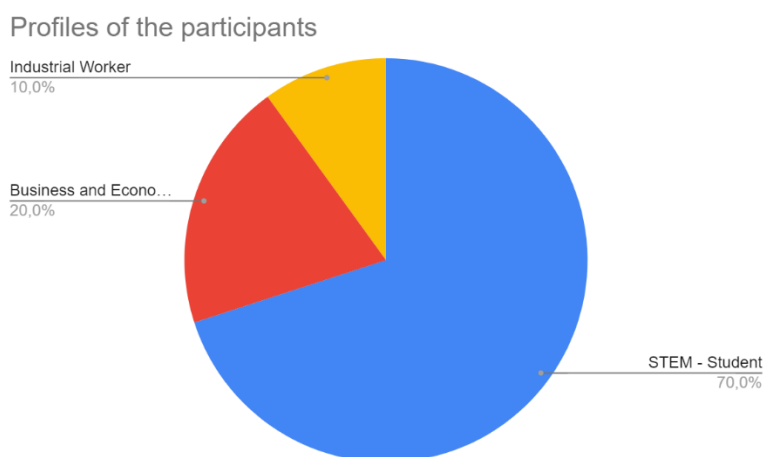


FIGURE 4: PARTICIPANTS' PROFILES

It is also interesting to note (See Figure 5) that a 33,3% of the trainees were interested in having a first approach to these topics, revealing the novelty of the topics addressed to the participants whilst 44,4% indicated that their main interest was to update their knowledge on the topics addressed. which means they already had a degree of familiarity with the subjects.

2 - What do you hope to gain by participating in the course?

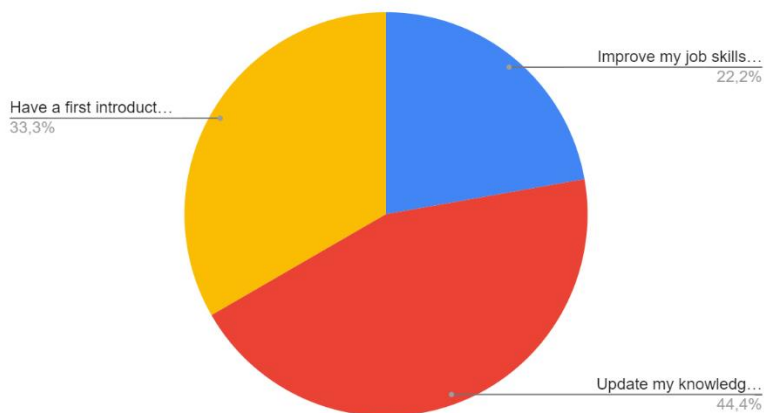


FIGURE 5: RESPONSE QUESTION 2

Figure 6 describes the current understanding on industry 4.0 topics before the training, highlighting that only 10% of the trainees considered to have a good understanding and 40% declared to have little knowledge on the subject.

3 - Previous knowledge and understanding

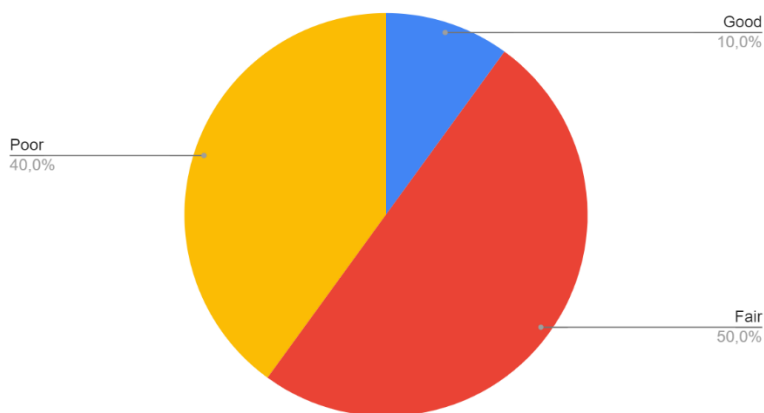


FIGURE 6: RESPONSE QUESTION 3

Another remarkable element is the value that trainees have given to the training course as a tool that can help them improve their professional skills. Specifically, 80% agreed or totally agreed that the course could benefit their personal work (See figure 7).

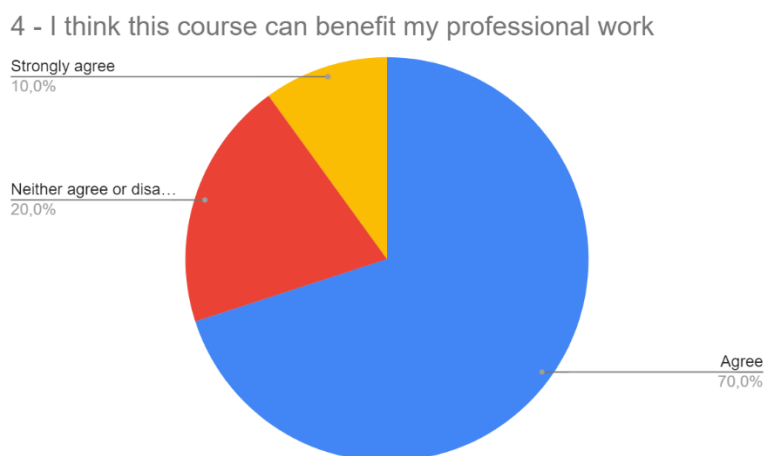


FIGURE 7: RESPONSE QUESTION 4

In addition, as can be seen in Figure 8, none of the participants had participated in a specific course on digital skills and industry 4.0, revealing the lack of specific courses in this area.

9 - Have you attended already similar courses provided by other organizations?

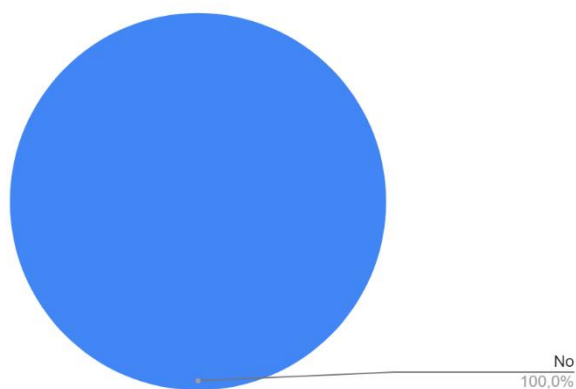


FIGURE 8: RESPONSE QUESTION 9

Finally, and as reflected in the following figure (FIGURE 9) all participants agreed or fully agreed that the objectives of the course were clearly defined, which means that the proposed structure of the course as well as the previous Communications have been effective, knowing the participants the scope of the course and its contents.

1 - The objectives of the training are clearly defined

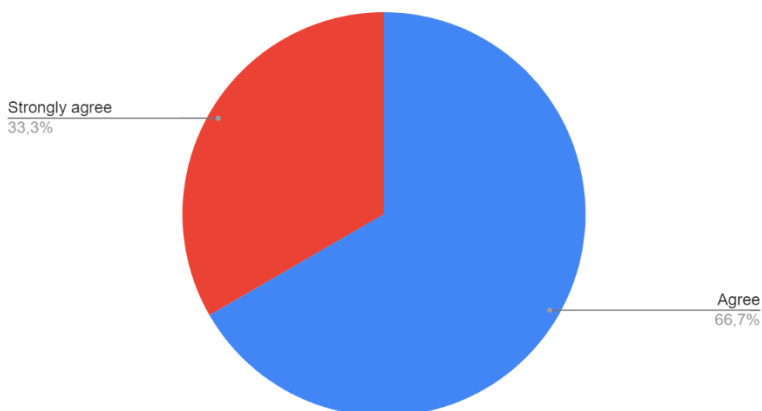


FIGURE 9: RESPONSE QUESTION 1

1.1.1. Presentation of the views/opinions of all participants & stakeholders

At the end of the test, a survey was carried out among the participants in order to evaluate, with the participants themselves, the course designed by RESTART. The main aim was to find out their opinion, after the training, on the suitability of the contents developed and their general satisfaction with the RESTART training course.

According to the results of the TEST evaluation, it can be concluded that the experience has been positive for the participants. All participants agree that their expectations of the course have been met, as it is shown in the FIGURE 10.

1 - My expectations about the course have been met

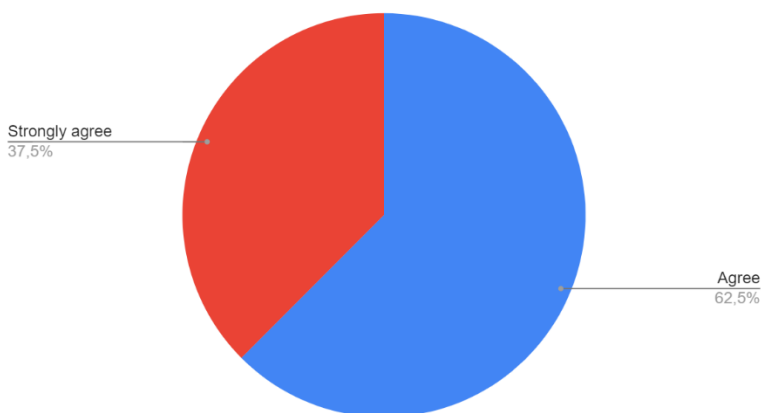


FIGURE 10: RESPONSE QUESTION 1

FIGURE 11 show how all the participants engaged in the training course, believe that the course has increased their current understanding about the principles of Industry 4.0. Furthermore, as can be seen from the responses in FIGURE 13, an 87,5% of participants believe that the training course have improved their knowledge about the topics presented during the course.

FIGURE 12 also shows that the participants believe that the course will benefit their professional work.

The responses analyzed in Figures 11, 12 and 13 together show that RESTART training course met the aim of transferring new knowledge to participants.

2 - This course has increased my current understanding of the topics

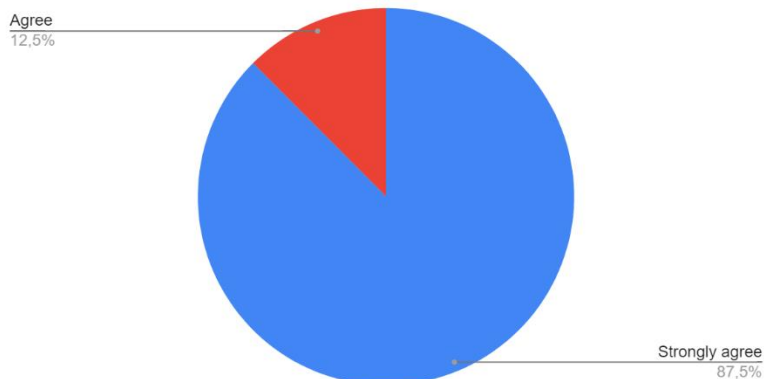


FIGURE 11: RESPONSE QUESTION 2

3 - This course will benefit my professional work

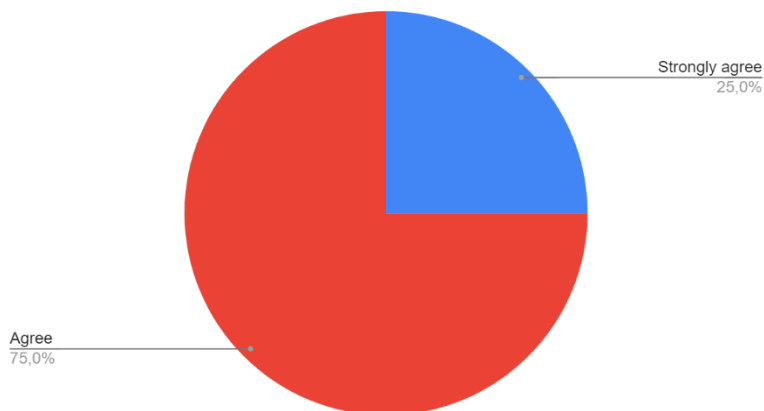


FIGURE 12: RESPONSE QUESTION 3

4 - This course has improved my knowledge about the topics presented

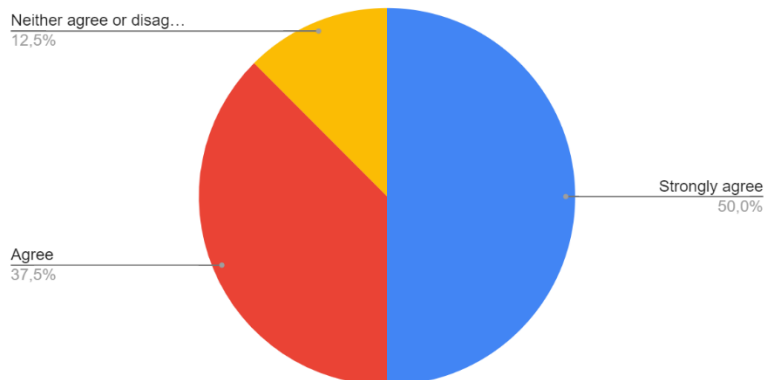


FIGURE 13: RESPONSE QUESTION 4

Another element evaluated by the participants was the level and quality of the contents developed. FIGURE 14 reflects that for 100% of the participants feel that the course was designed just right for their experience level. This statement is reinforced by the results shown in FIGURE 15, where participants have agreed or strongly agreed that the training material developed by the RESTART Consortium was appropriate for the participants' level of experience. This means, the RESTART training contents are effective to support industry sector in updating their knowledge on Industry 4.0, achieving the aim of the project.

5 - For my experience level, the course was

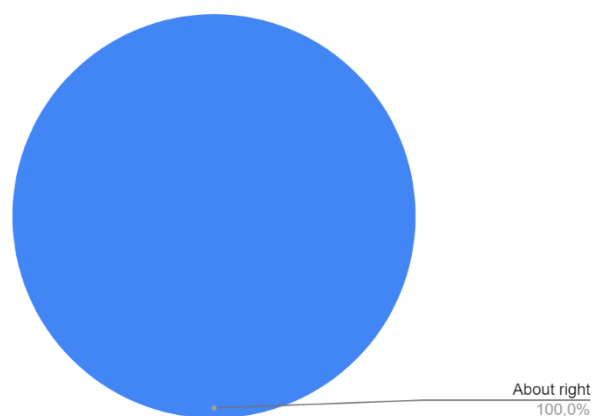


FIGURE 14: RESPONSE QUESTION 5

6 - The training material provided was suitable for my level of experience

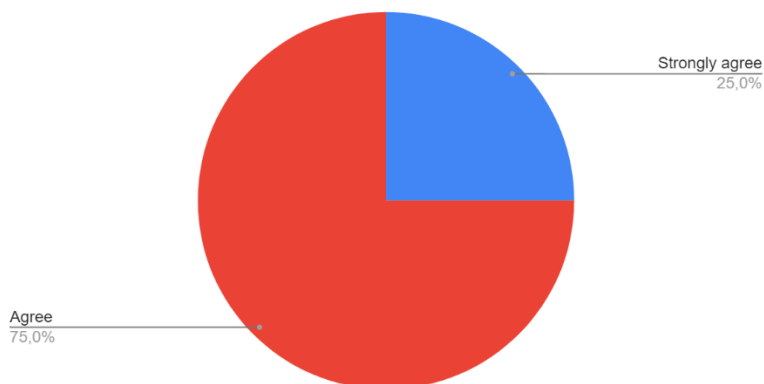


FIGURE 15: RESPONSE QUESTION 6

As can be seen in FIGURES 16, 17 and 18, the participants think that the training material provided during the training course was interesting (FIGURE 16), up-to-date and forward looking (FIGURE 17) and easy to understand (FIGURE 18). From all the above, it can be concluded that the quality of the training materials developed by the RESTART partnership was high.

7 - The training material provided was interesting

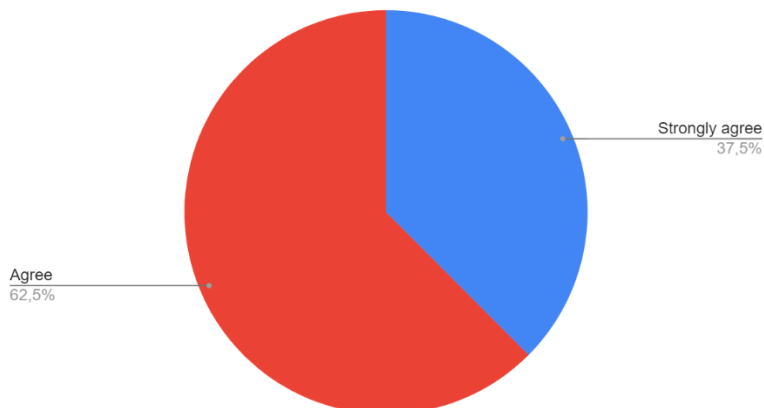


FIGURE 16: RESPONSE QUESTION 7

8 - The training material provided was up-to-date and forward-looking

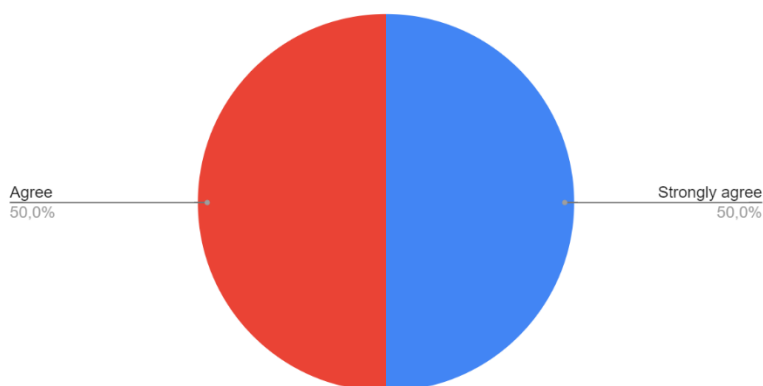


FIGURE 17: RESPONSE QUESTION 8

9 - The training material provided was easy understandable

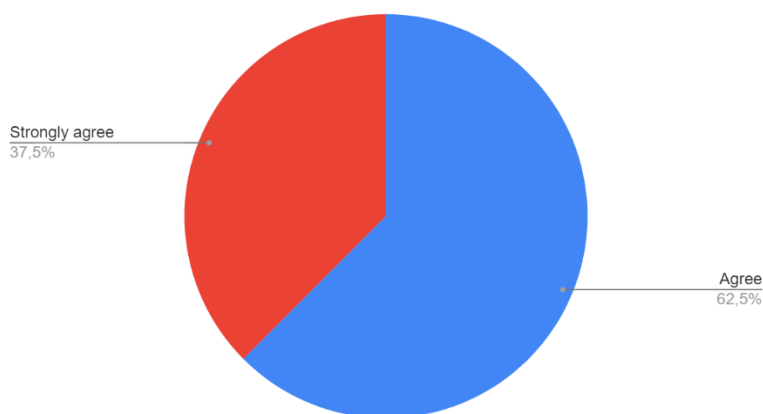


FIGURE 18: RESPONSE QUESTION 9

FIGURE 19, shows that all the participants believe that the RESTART training course helped them better understand the complex issues and problems related with the implementation of Industry 4.0 technologies in the workplace. Furthermore, after the training, all participants considered that the topics covered, and the material developed provide relevant information for their work (FIGURE 20). In short, and as reflected in the answers in FIGURE 21, all participants agree or strongly agree that, in general, the course contents were organized and easy to follow.

10 - The training material provided helped me better understand the issue

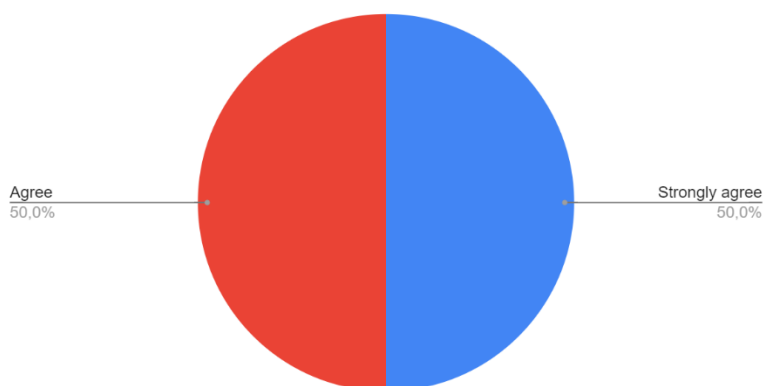


FIGURE 19: RESPONSE QUESTION 10

11 - The training material provided provide information relevant my work

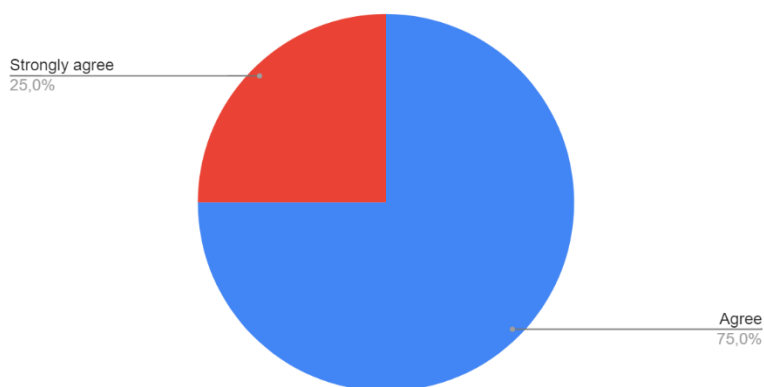


FIGURE 20: RESPONSE QUESTION 11

12 - Overall the content was organized and easy to follow

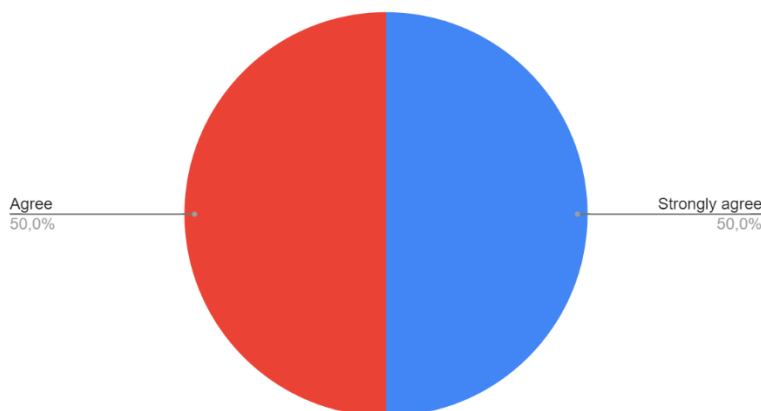


FIGURE 21: RESPONSE QUESTION 12

1.1.2. Main findings from the focus group: participant's feedback

Following completion of the RESTART training course a focus group was held with the participants. The aim of the Focus Group was to compare and jointly evaluate the experience resulting from the course. To this end, a joint discussion was organized around the following questions:

FEEDBACK ON METHODOLOGY: F2F, E-LEARNING PLATFORM, VIDEOS AND ADDITIONAL MATERIALS

Although online training facilitates autonomous learning, particularly in a work context, participants highlighted the value of face-to-face versus online training, as it offered a better learning experience by providing immediate interaction between trainee and trainer, especially when it comes to resolving doubts or going deeper into the topics covered.

WERE THE TOPICS USEFUL? WERE THERE ANY TOPICS LEFT OVER OR MISSING?

All participants considered the content of the training useful and relevant, highlighting the appropriate combination of topics and the proposed route through the main industrial processes.

In turn, participants highlighted their interest in increasing knowledge in the field, especially of software and tools for deploying 4.0 industry. So, although the duration of the course seemed to them to be a good approximation, they considered the need for a longer course, which would allow them to have more advanced knowledge.

During the debate there was also interest in including new topics in the toolbox such as predictive maintenance, Augmented Reality and Artificial intelligence

ARE THERE OTHER ASPECTS BESIDES THE ALREADY EXISTING ONES, WHICH WE SHOULD IMPROVE?

One participant suggested to include, as part of the training, some real case of 4.0 technologies implementation in an industrial plant.

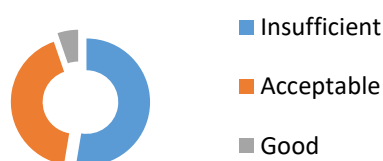
Several participants assured that they would have liked to go deeper into the topics, and acquire more specific knowledge, especially in e-commerce, in software for the design of products and tools for the creation of digital factories.

1.2. *Description of the test in the Basque Country*

The piloting has been done in the premises of the Centro de Formación Somorrostro, Basque Country. There have been 12 participants in total, most of them adults and some younger student. They come from different areas, some from the industrial sector, some from commerce and a few from ICT.

Some of the participants have mentioned in the questionnaire done before beginning the course that their knowledge about the topic is average, acceptable, but almost half of them feel that it is insufficient, as we see in the graphic.

3.Previous knowledge about the topic

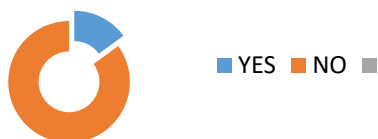


For the course we have used the PPT presentations of the modules, as they are in the TOOLBOX, and have followed them including the videos and links on them.

The piloting has been done in 4 days, with a total of 15h face to face and the rest online, with a total of 40 hours. The participants were told to follow and study the modules that were not done face to face at home (online). After each module the participants were asked to complete the small quiz and send it to the trainer in order to correct it.

As seen in the next graphic, only two of the participants had attended a course or seminar related to this Industry 4.0 topic, and the rest had never been in one. So they were excited to learn about it.

9.Attendance to similar courses



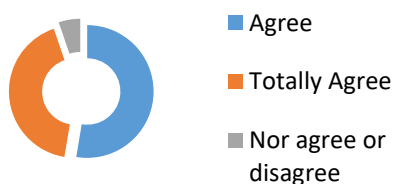
All the participants have passed the test-course without any problem and have been awarded with the Restart certificate, as agreed in the Consortium.

1.2.1. Presentation of the views/opinions of all participants & stakeholders

When the course ended the participants were asked to fill in a short questionnaire to evaluate the material developed in the project and the relevance of it all.

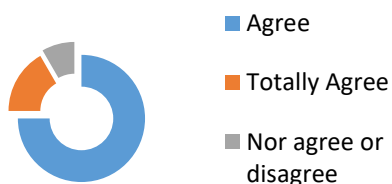
For most of the participants it seems that the course met their expectations, as you can see in the following graphic.

1. My expectations have been satisfied

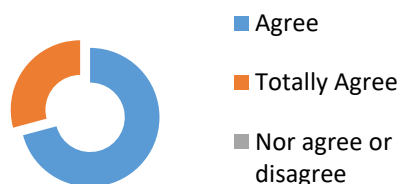


Participants have also commented that the material used is appropriate for their level of experience and they have gained knowledge about new technologies etc.

3.This course will benefit my professional work

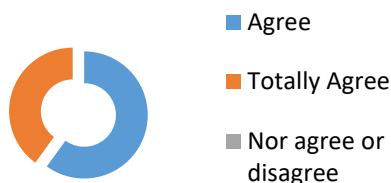


4.This course has improved my knowledge about these topics



In general they found the course well organized and easy to follow.

12. Good structure and easy to follow



1.2.2. Main findings from the focus group: participant's feedback

After finishing the training the participants were also invited to join a focus group. This was very useful to open a group discussion about the course.

The participants have been interested throughout the course and have commented that they found it useful. They believe change is coming (the revolution of Industry 4.0) and that they have to be up-to-date with the latest technologies, methods and ways of doing.

They have also mentioned that the course has awakened their interest in the technologies that revolve around INDUSTRY 4.0, and they have shown special interest in relation to 3D PRINTING, and the possibilities offered by CAD in the field of medicine...

Apart from that, they have not made any suggestions to include more topics or new material, they seemed happy with the existing modules.

2. Conclusions and recommendations for the final Toolbox

The participants were satisfied with their participation at the training course. They enjoyed the timing and the flexibility of the modules.

They were all interested with the topics of the training course and they are also interested to participate in similar trainings in the future.

Participants have found the material from the Toolbox and the Toolbox itself appealing and easy to follow. They have also stated that the topics were appropriate and relevant for their work or jobs, so the idea of the project Restart 4.0 has been well received.

The general opinion is that having online material is good, but teachers or trainers are necessary to understand some topics better and to have a guide through the course. At the same time, they were also pleased with the possibility of having additional material (tutorials, glossary, etc.) to expand their knowledge and develop new skill on their own.

RESTART4.0

Project Partners:



PROJECT:

Restart - Digital Training Toolbox to Foster
EU'S IndusTry 4.0 RevoluTion



Co-funded by the
Erasmus+ Programme
of the European Union

Website: www.restart-project.eu

Email: info@restart-project.eu