



Erasmus+

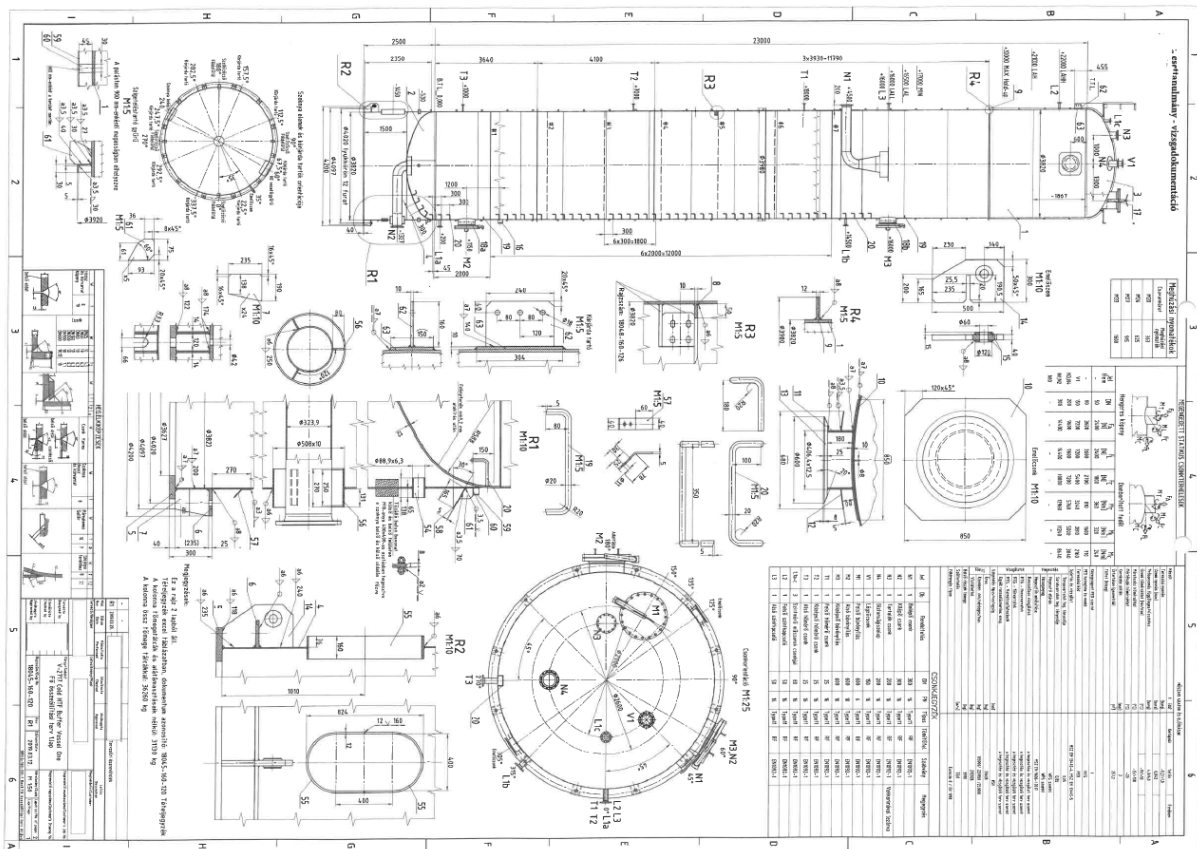
Co-funded by the Erasmus+ Programme of the European Union. These projects have been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



## MHE- and its network MHE Academy and its VET school –

### PLAN for Implementation WP-1

Generally: The task to teach the students for inspection activities before , during and after of the welded product manufacturing. On belowed drawing can be seen a welded product at the welded pressure equipment



Funded by the Erasmus+ Programme of the European Union

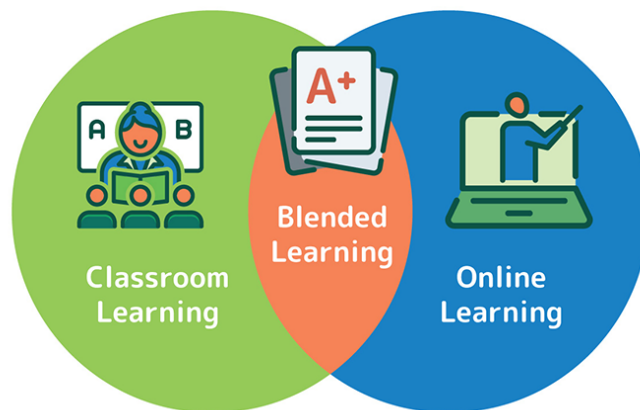
The European Commission support for the production of this publication does not constitute endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein

Teaching is a theoretical education in classroom and face to face between the teacher and the student. Practical teaching in workshop or testing laboratories – in training centres teaching in workshop or testing laboratories – in training centres.

### WP1:

**D1.1 – developing a plan for a blended learning training program that is going to improve the usage of inspection and another welding activities based on IT.**

## Blended Learning



During training program the steps of manufacturing process are in the focus. It means how can be act effectively and teaching in modern way the inspection responsibilities, the welders's ability and tasks before, during and after of a welded product at different safety classes. For example, at the steel construction or pressure equipment or aimed nominated operational elements for example the welding processes, the kind of the product, or the inspection special elements. For example see drawing copy on a welded subject a pressure equipment. How is inspected the whole production product, and these knowledge how is taught using different method and tools, but not only in the classroom possibilities but how could be taught the knowledge in the present technical, pedagogical environment. There are many possibilities to use new method and tools:

a/ The teacher delivers a general introduction into the work-based pilot-course as whole (to know each-other in the student group and makes RPL – investigation, gives basic information on welding technology and build up a positive atmosphere for the common work, etc. The teachers and students (in groups max.3- 6 persons) will be informed about general activity and liability of the inspector. This is a theoretical overview of welding activities but parallel will be organized work-based activity as well.

There will be on every second day short discussion in the group even in the workshop or in class-room – the main point is to have always the up-to-date information related to the readiness level or solution problems related to the task.

b/ The plan developed for blended learning relating to the inspection's activity starts with the classroom lectures where one of the first task is to be acquainted with the professional definition of inspection and welding. The main point is to understand each other if using IT, welding and cutting definitions.

c/ There are some drafts prepared which will be used for the first pilot course the virtual welding and practical workshop welding are in balance.

d/ During this first pilot course information will be collected and after finishing the pilot course a supervise will be done relating to the classroom and work-based manufacturing activities.

e/ The topics for class-room learning are the EWF, IIW, AWS and national professional knowledge resources, guidelines, (legal EU) rules which compose compact LMS after the pilot program.

f/ The work-based activity means that there in the workplace there is one drawing of real part of the company's products and the student has to create an inspector action plan, which has chapters, paragraphs for material testing belonging to hands on workpiece.

g/ This teacher with tutor and the students with teacher made plan will be discussed together with each other and may be with some of other students and teachers the corrugated experiences will be reannexed (feed-back) to the workshop activity.

h/ The practical work and theory are connected and after pilot program the professional knowledge and skill are personalized to fulfil the intellectual capability of the student /candidate.

i/ In the long run it is arranged that the theoretical learning materials and practical skill and workshop activities are periodically supervised and up-to-dated.

j/ After pilot course made corrections are ready in this case the flipped learning may be implemented.

k/ All these (a-j) mentioned activities are belonging to the obligations of the VET. It will be used each important elements of the IT methods and tools, in the classroom or mixed another elements as work-based learning.

This method of education would be as an example or a way to spread and implement in other professional jobs teaching using case studies, taking in account to the silent knowledge aspects.

There is plan to analyse the knowledge of the candidates before, during and after of each teaching competence unit.

## D1.2.

**Hands on demonstration for a small group of teachers that will be testing and applying blended methods and tools in the course. This will be followed with piloting by small courses for students.**



The tutor in a classroom meets the teachers.

- The first step to clarify the training material placed on the course website or /and on the platform . The place of this discussion there is in the classroom see the picture. Here is the understanding the internet using, the website and platform what are ready to teaching already. Specially the Stimuli and ItsLearning will the tools used for trainer and student's education.

The demonstrator/tutor/ for the train the trainer will be nominated by MHE.

The demonstrator shows an example from each blended learning background using the Guideline IAB-195r4-20 on Blended learning”.

These are included: text documents, e-learning programs, audio and video recordings, LMS, computer -aided assessments, online multiple -choice questions.

Since the teachers could already use the tools it is needed to plan for

adaption of course to mixed work based learning elements.

The place of this teaching at an industrial form with 3-3- teachers that be using a welded product inspection. showing an inspection and testing plan.

Thus the small group teaching there the next:

- 2-2- days meeting in classroom. One demonstrator/tutor/ and 3-3 teachers
- One day meeting at site of at welded product manufacturing. One tutor 3-3 teachers
- Óne day meeting online on evaluation the used methods and tools. One tutor and 6 teachers.

The exact days were hold in September on 2<sup>nd</sup>, 3<sup>rd</sup>, and in October on 10<sup>th</sup> an 11<sup>th</sup>. For the first group. The tutor was Mr L. bíró.

For the second group the days were organised at the same time by Mr B. Varbai as a tutor.

The common evaluation day was on 11<sup>th</sup> of October 2 tutors with six teachers.



product visually. 3 students, one tutor and one person from workshop .

The tutor shows to the teachers at site how has to be inspected a welded

### **D 1.3. Piloting at VET supply level**

The piloting for students is started during a face to face course where 3-3- students who were participated in the iQVet project piloting , it means they can use already each method and tools what the trained teacher could be used.

The time schedule for the course is planned in October for 5 days by two groups: One-one tutor and 3-3 students. The tutor were the trained 2 teachers Mr Géza Gremesberger and Mr Béla Gayer.

The next new elements were teached as work-based element:

- To prepare a testing and inspection plan at site of manufacturing.
- Using the multiple-choice questions or to put question or to answer to them.
- How is used the webpage Stimuli and the Its learning software
- How is used the simulation, the augmented reality, how is inspected the documentations, reports records.

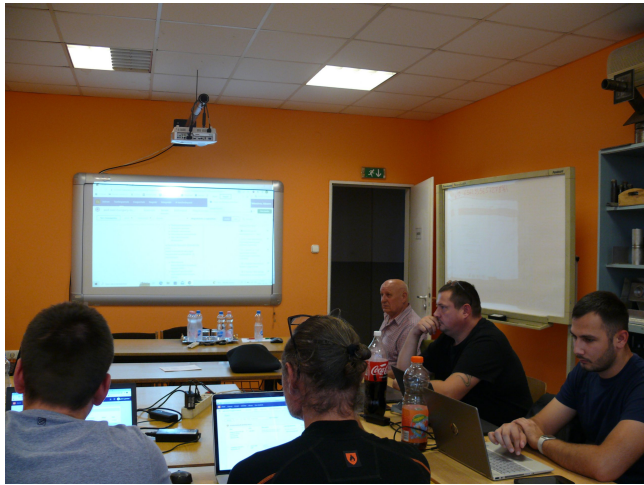
The main subjects were:

1. Welding technology
  - a. Material knowledge
  - b. Equipment's, welding processes
  - c. Design of the welded structures
  - d. Quality management system
2. Testing and Inspection at welding area
  - a. Quality assurance
  - b. Practical tasks
  - c. Inspection and testing

The training session was divided into 10 competence units / during training was trained some of them:

- a. Introduction and the checking the prior learning of the students/ face to face /
- b. Contract elements, design review /online/
- c. Planning the testing and inspection/ work-based learning /
- d. Production documentation /work-based learning/
- e. Economical things /online/
- f. NDT testing / work-based training learning /
- g. DT testing/online/
- h. Protection of the surface/online /
- i. Delivery documentation / WBL at site /
- j. Repeating and exam with multiple choice questions and practical failure founding method / online /

The chapter 1 could be left if the student had enough knowledge at the RPL beginning of the course./ From 6 students 5 had RPL on welding /



The tutor teaches the students using of e-learning, Stimuli webpage and Its learning software

#### **D 1.4. Develop the first set of base line guidelines**

According to the project-flow after finishing the test pilot-programs it will be arranged to start to evaluate the results of the test-pilot activities and create a long-term and basic line. The basic document will be the manual valid for the whole work-based learning accredited period.

After these train the trainer courses and the piloting for students could be evaluated the experiences.

1.The older teachers and the English not speaker teachers could have done more time as the younger English speaker to understand and use the platforms. They need to have more best practices and a final e-learning material. They could have very important element the strongest network contact of VET schools and the industrial firms. To use such a platform where they could see new digital methods on internet.

2. For the students, the trainings were satisfied, but they said that the content of the teaching chapters depends on the type of the welded products, that is why very difficult to understand the chapters element not the digital system, but the specific elements. So seems to be that the younger students were very satisfied with the digital system. It will be next course to improve the raisings.

One of the best occasions to make some basic corrections will be given in 2024 in Hungary when for one week the trainers will have international opportunities to discuss, evaluate the results of their test-pilot courses. Some of the valid VET

guidelines will be studied and taking over and implemented in the manual to reach a concise managing manual document.

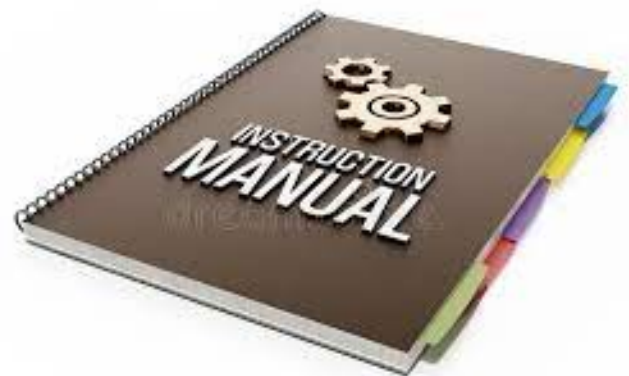
All activities will be organized according to the basic results of previous test pilot-actions – and follow the prepared, valid, and concise the manual documentation, which helps innovative developments as well.

All the pamphlets give information to the society about the project in languages of the consortium member's countries.

Our proposal would be preparing a manual for the users (teachers). In this manual some results of previous three years summarized or collected or developed or drafted or any other idea in the frame of iQVet project.

#### CONTENT of the manual:

- Introduction into the content,
- -background information,
- terms and definitions,
- how to use the instruction manual,
- the rolls of teachers and students,
- case studies, to exercises how to use
- the methods and tools during teaching
- evaluation methods,
- literature
- developing possibilities



The one form of the guideline