



# WELDONE

BOOSTING INNOVATION IN WELDING TRAINING

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# Intellectual Output 5

## Pedagogical Guideline for EWF Qualification System



# TABLE OF CONTENTS

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<b>1. Introduction.....</b>	<b>2</b>
<b>2. The purpose, principles and values of capacitating Teachers and Trainers from EWF Qualification System.....</b>	<b>4</b>
<b>3. WELDONE Training of Trainers (ToT) Curriculum.....</b>	<b>5</b>
3.1 Structure of the ToT Curriculum.....	5
3.1.1 Intended Learning Outcomes (LOs).....	6
3.2 Access conditions.....	6
3.3 Special requirements.....	6
3.4 ToT Course Learning Outcomes' descriptors.....	7
<b>4. ToT Curriculum.....</b>	<b>8</b>
4.1 Short description of each Competence Unit.....	8
4.2 Contents of each Competence Unit.....	9
CU1   Multiple Intelligences and Learning Styles.....	9
CU2   Learner Centered Didactics: Problem Based Learning, Critical Thinking.....	10
CU3   Gamification.....	11
CU4   Digital Competence and using digital resources.....	12
CU5   New Media Didactics: The use of social media and micro-learning.....	13
CU6   Personal, social and learning competence.....	14
CU7   Entrepreneurship competence.....	15
<b>5. Implementation of the ToT course.....</b>	<b>16</b>
5.1 Workshop Model.....	16
5.2 Toolkit.....	17
<b>6. Assessment Procedures.....</b>	<b>17</b>
 <b>ANNEX 1   EWF Qualification Systems' Framework.....</b>	 <b>19</b>
<b>Table 1   WELDONE ToT Course Structure.....</b>	<b>5</b>
<b>Table 2   ToT Course Learning Outcomes – EQF level 4 and level 5 descriptors.....</b>	<b>7</b>
<b>Table 3   Short description of each ToT Curriculum Competence Unit.....</b>	<b>8</b>
<b>Table 4   Implementation of the ToT Course – Elements of Workshop sessions.....</b>	<b>16</b>

# 1. Introduction

The European Federation for Welding, Joining and Cutting (EFW) has been working on the adaptation of its Qualification System to a modular approach where qualifications are comprised of Competence Units (CUs) set in a Learning Outcomes' (LOs) approach, in line with current European education tools and policies that foster transparency and recognition of qualifications by different Vocational Education and Training (VET) systems across Europe and mobility of learners and professionals among EU Member States. The WELDONE project is in line with the work that is currently being done.

WELDONE focuses on the need for teachers and trainers working in Approved Training Bodies (ATBs) from EFW Qualification System to acquire skills and knowledge on alternative pedagogical approaches and methodologies that can be used to look at competences in a holistic way. Thus, by creating and implementing a Training of Trainers (ToT) curriculum, comprised of a set of Competence Units that cover specific key competences for lifelong learning, referenced by the EC (such as Entrepreneurship or Personal, Social and Learning competences), urging new technologies and tools and pedagogical approaches, WELDONE partners are creating a pedagogical upskilling scheme to update teachers and trainers from EFW Qualification System in regards to competences that are required to prepare the workforce in a manner that responds to the challenges of today's modern societies, reinforcing the need to look at competences in a more broad way than traditionally done by EFW, and to promote an open learning environment where creativity and risk-taking are encouraged and mistakes are regarded as learning opportunities, thus improving their learners' learning experience and abilities.

This ***Pedagogical Guideline for EFW Qualification System***, of which EFW is responsible, is the last Intellectual Output (IO) of WELDONE project, developed in collaboration with all project partners, some of which are members from EFW, well knowledgeable of EFW Qualification System:

- #STRUKA (HR), partner coordinating WELDONE project,
- ASR – Romanian Welding Society (RO),
- IEKEP – Institute of Training and Vocational Guidance (GR),
- ISQ - Instituto de Soldadura e Qualidade (PT),
- IOS - Industrial and Trade School Slavonski Brod (HR),
- MÁTRAI - Welding Technique and Vocational Training Ltd (HU).

This document is a recommendation guide to foster the change of mindset on how training is delivered by teachers/trainers from the EFW Qualification System. It contains information on how the Training of Trainers (ToT) curriculum, designed and developed in WELDONE, can be implemented within the EFW Qualification System for capacitating teachers and trainers on the use of alternative pedagogical approaches and tools.

The introduction of the ToT curriculum in the EFW Qualification System represents an added- value for the System, enabling its continuous improvement towards the innovation and capacitation of teachers and trainers, which ultimately will have a positive impact on learners and Companies.

## 2. The purpose, principles and values of capacitating Teachers and Trainers from EWF Qualification System

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In a world that is constantly changing, VET systems and providers are coping with an array of challenges not only at technological level, but also at social-economic levels.

There is a need to be increasingly flexible and innovative to continue ensuring that learners have an effective learning experience, one that allows them to acquire the needed set of skills and knowledge to successfully integrate the labour market by the end of their academic pathways and successfully perform their profession, keeping up with the new requirements from technological and societal trends.

Teachers and trainers are regarded as “key agents for high quality initial and continuous” VET<sup>3</sup>, hence their crucial role in helping their learners (current and future professionals) achieving those goals and why their professional development is so important. This professional development relies on another aspect regarded as of paramount importance by the European Commission: lifelong learning. It allows people in general, and professionals in particular, to upskill and/or to reskill in order to progress inside their organizations and/or to change to other professions, if needed.

In the specific case of teachers and trainers belonging to EWF Qualification System, this professional development rooted on a lifelong learning perspective allows them to be updated on innovative pedagogical approaches and training tools that increase their learners’ participation and motivation for learning, to be able to cope with the heterogeneities of their learners, to apply common European transparency tools and contribute to tackling emerging needs imposed to them, to ATBs and to learners. WELDONE ToT is not a Qualification. It is a training course that will allow EWF Qualification System to provide its teachers and trainers the opportunity to develop, and foster among their learners, critical analysis skills and key competences, to implement cross-disciplinary and innovative teaching and learning approaches (in line with one of the key actions from the European Skills Agenda<sup>4</sup>) in their respective ATBs, and ultimately fostering the professional (and personal) success of their learners.

This course, rooted on a modular approach and comprised of CUs organised in Learning Outcomes (LOs) written in terms of skills and knowledge to be acquired by participants, aims to capacitate teachers and trainers to deliver technical training in a WELDONE way, meaning “using innovative pedagogical approaches and embedding the development of key competences in technical training”. The WELDONE training course is also promoting inclusion, since it urges teachers and trainers to consider different learning styles and intelligence types.

Hence, those who successfully accomplish the complete ToT course (or, in alternative, the CUs that comprise the course, individually) will be better prepared to apply those innovative pedagogical approaches during training, with their own learners, thus improving their learning experience and the acquisition of relevant technological and transversal skills and key competences for a smoother and successful integration in the labour market.

<sup>3</sup>EC (2010). Bruges Communiqué (available on <https://www.cedefop.europa.eu/en/content/bruges-communique>)

<sup>4</sup>EC (2020). European Skills Agenda (available on <https://ec.europa.eu/social/main.jsp?langId=en&catId=1223&moreDocuments=yes>)

## 3. WELDONE Training of Trainers (ToT) Curriculum

This section aims to provide information about the ToT Curriculum, more specifically how it is structured, its access conditions, the levels in which the intended Learning Outcomes are written and how Trainees can be assessed at the end of the Course or Competence Unit(s).

All this information can be found in the ToT Curriculum & Training Guideline (WELDONE Intellectual Output (IO) 1), a complete document to be used by trainers who will implement the ToT course, where specific details and tips are provided regarding the Workshop Model (recommended approach for the implementation of the ToT course), contents of each CU, suggestions for lesson plans, suggestions of exercises and best practices that can be used during the workshops and recommendations for assessment and evaluation.

### 3.1 Structure of the ToT Curriculum

The ToT course is based on a modular approach. It contains seven Competence Units, organised in Learning Outcomes written in accordance with a specific EQF level, set considering the expected previous knowledge and skills teachers and trainers (from now on referred to as Trainees) have about the subject matters addressed by the CUs. Hence, the ToT course can be implemented as a whole or as a set of specific CUs, depending on the needs and interest from Trainees.

**Table 1** WELDONE ToT Course Structure

ToT Competence Units (CUs)	Recommended Contact Hours*	Expected Workload**	EQF level addressed by the CU	Related EWF Proficiency Level
CU1 – Multiple intelligences and learning styles	12	24	EQF 4	Independent
CU2 – Learner Centred didactics: Problem based learning, Critical thinking and Collaborative learning	10	20	EQF 5	Specialized
CU3 – Gamification	14	28	EQF 5	Specialized
CU4 – Digital competences and using digital resources	12	24	EQF 4	Independent
CU5 – New media didactics: the use of social media and micro-learning	10	20	EQF 5	Specialized
CU6 – Personal, social and learning competences	11	22	EQF 4	Independent
CU7 – Entrepreneurship competence	12	24	EQF 4	Independent
<b>Total</b>	<b>81</b>	<b>162</b>		

\*Recommended Contact Hours are the minimum recommended number of hours used for the implementation of the Competence Unit through different workshop sessions, to be organised by the Trainer according to suggestions provided on WELDONE ToT Curriculum & Training Guideline.

\*\* Expected Workload is calculated in hours, corresponding to the time Trainees typically need to complete all learning activities required to achieve the defined learning outcomes in each CU in formal learning environments, plus the necessary time for individual study.

<sup>5</sup>European Qualifications Framework (available on <https://europa.eu/europass/en/description-eight-eqf-levels>)

### 3.1.1 Intended Learning Outcomes (LOs)

The intended Learning Outcomes of the ToT course are described in detail in each Competence Unit in terms of Knowledge and Skills, written in line with the descriptors of the European Qualification Framework for levels 4 and 5 (depending on the CU), which correspond to specific proficiency levels within EWF System Framework levels – Independent and Specialized, respectively (please see section 3.4 and Annex 1 of this Guideline). These levels do not correspond to entry requirements; they reflect the level of expertise expected to be achieved by Trainees at the end of the ToT course.

During the implementation of the CUs, Trainees will be able to carry out specific exercises that will enable them to increment the theoretical contents conveyed in training in a practical way, using the alternative and pedagogical approaches promoted by the ToT course, to be used further on by Trainees with their own learners.

In order to evaluate Trainees' performance and to understand whether the intended Learning Outcomes were achieved at the end of the implementation of each CU, specific assessment tools will be applied, in accordance with the suggestions provided by WELDONE ToT Curriculum & Training Guideline (and briefly presented in this document, in section 6)

### 3.2 Access conditions

The access conditions to the ToT course were defined by WELDONE partners based on the main target groups of the project and on the professional profiles of Teachers and Trainers from the countries of the partnership (Croatia, Greece, Hungary, Portugal and Romania):

- Teachers/trainers belonging to EWF Qualification System, educators from STEM fields and from VET and/or adult education interested in including the WELDONE approach in their training/teaching practice.

### 3.3 Special requirements

In order to attend the ToT course, participants must comply with the access conditions. In the context of implementing the ToT Curricula into the EWF system, the establishment of a dedicated Working Group will be considered having as one of the first decision to define the applicable assessment requirements, which shall be selected from a set of assessment tools (that can be applied both for conducting formative and/or summative evaluation), irrespectively of the Education and Training provider implementing the ToT.

The rules to conduct the assessment are described in section 6 of this Guideline.

To duly recognize Trainees' success, a Record of Achievement is recommended to be issued after assessment approval, at the end of the implementation of a given CU, to acknowledge the achievements in a particular CU.

In case the ToT course is implemented entirely (i.e., implementation of all CUs that comprise the course), then a Certificate of Attendance or a Certificate of Approval shall be issued after assessment approval, at the end of the implementation of the course.

Records of achievements and Certificates of Attendance or Certificates of Approval issued in the scope of the ToT course will be valid for life.

### 3.4 ToT Course Learning Outcomes' descriptors

As previously mentioned (Table 1 WELDONE ToT Course Structure), each CU that is part of the ToT curriculum is organized in Learning Outcomes, written in terms of skills and knowledge, in line with a specific EQF level that ranges between levels 4 and 5, depending on the expected level of skills and knowledge the Trainees already have about the topics addressed by the CUs and what is expected they acquire at the end of the implementation of those CUs. In other words, if Trainees are expected to have previous skills and knowledge about the topics addressed by a CU, then the Learning Outcomes of that CU will be written in line with EQF level 5, thus allowing Trainees to acquire further skills and knowledge on those topics, after successfully accomplishing its Learning Outcomes.

Thus, it is important to understand the contents of the descriptors of each of the above-mentioned EQF levels as a way to understand the level of skills and knowledge the Trainees will acquire at the end of their implementation:

**Table 2 ToT Course Learning Outcomes – EQF level 4 and level 5 descriptors**

EQF Level	Knowledge	Skills	Responsibility and Autonomy	EFW Proficiency Levels
The learning outcomes relevant to Level 4 are:	Factual and theoretical knowledge in broad contexts within a field of work or study	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change; supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities	Independent
The learning outcomes relevant to Level 5 are:	Comprehensive, specialized, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others	Specialized

## 4. ToT Curriculum

### 4.1 Short description of each Competence Unit

The ToT Curriculum is comprised of seven Competence Units (CUs), organized in Learning Outcomes written in terms of skills and knowledge to be acquired by trainees at the end of the learning process, after a successful assessment. This means that Teachers/Trainers from EWF Qualification System will have the flexibility to attend the entire ToT Course or only the CUs they are interested in.

The table below presents, in a summarized way, the purpose of each Competence Unit. To access the detailed information about their contents and how to implement them, please access the WELDONE ToT Curriculum document.

**Table 3 Short description of each ToT Curriculum Competence Unit**

Competence Unit	Main purposes
<b>CU 1</b> <b>Multiple Intelligences and Learning Styles</b>	The main focus of this CU is the theory of multiple intelligences (MI) and the theory of learning styles (LS) and their practical integration in curriculum development and assessment, as well as in the classroom itself, as a way to help learners applying their type of intelligence in their learning process and be motivated and engaged in learning.
<b>CU 2</b> <b>Learner-Centered Didactics: Problem-Based Learning, Critical Thinking, and Collaborative Learning</b>	This CU addresses the Learner Centered Approach and its different pedagogical strategies, aiming to capacitate teachers/trainers to engage and encourage their learners' active involvement in the learning process and experience by using those strategies, hence replying to the growing need to stimulate active learning and to encourage learners to be creative and critical thinkers, able to work collaboratively with each other.
<b>CU 3</b> <b>Gamification</b>	This CU aims to enable Trainees to create games or gaming environment in education. They will get acquainted with developing a gamified exercise, tools or events that can be used in training situations such as developing motoric skills and memorizing materials, thus increasing motivation in learner groups to achieve better results.
<b>CU 4</b> <b>Digital Competence and using digital resources</b>	This CU focus on the digital literacy education of trainers and aims to contribute to improve specific competencies when using specific online and offline digital technology and digital tools to implement integrated technology practices for the improvement of the learning process. It also addresses the ability to use digital devices and equipment during training, knowledge on the online environment and how to use in secured conditions, digital communication and networking and digital media.
<b>CU5</b> <b>New Media Didactics: The use of social media &amp; Micro-learning</b>	This CU deals with the design of a new didactics that is appropriate for welding classes and for the whole STEM area, based on two pillars: social media and micro-learning. The basic objective is to enable teachers/trainers to acquire knowledge and skills that will allow them to be equal in the teaching process with the new digital generations of learners, to lead the teaching process.
<b>CU6</b> <b>Personal, Social and Learning Competence</b>	This CU aims at the enhancement of personal, social and learning competences in order to make the individual able to effectively cope with the growing competition in educational and professional environments. It includes the knowledge of learning strategies that best suit the individual, as well as the understanding of one's needs in competence(s) development and thus understanding how to navigate through a variety of ways for developing competences and finding one's path in education, training and career opportunities. Enhancing this competence will assist individuals to identify and set both professional and personal goals, to be self-motivated, resilient and more confident to pursue and succeed at the lifelong learning process throughout their lives.
<b>CU7</b> <b>Entrepreneurship Competence</b>	The CU focus on the development of trainers' capacity to act upon opportunities and ideas, and to transform them into values for others, managing risk, uncertainty, and ambiguity. In this CU trainers will learn how to apply active methods for engaging learners, such as problem-based learning or project-based learning and allow them to release their creativity and innovation potential, acquiring or building on hands-on and real-life learning experiences.



## 4.2 Contents of each Competence Unit

### CU 1 Multiple Intelligences and Learning Styles

#### Competence Matrix 1 | Multiple Intelligences and Learning Styles

##### SUBJECT TITLE

- Multiple intelligences (MI) theory
- Learning styles model
- MI theory and learning styles in curriculum design and implementation - a differentiated curriculum catering to both special and gifted education needs
- MI in testing and assessment

CONTACT HOURS (Total).....12

WORKLOAD.....24

LEARNING OUTCOMES “Multiple Intelligences and Learning Styles”	
KNOWLEDGE	<p><b>Factual and theoretical knowledge of the principles and applicability of:</b></p> <ul style="list-style-type: none"><li>• Multiple intelligences theory</li><li>• Types of learning styles</li><li>• Strengths and weaknesses of Multiple intelligences and Learning styles models</li><li>• How to use MI theory and learning styles in curriculum design and implementation</li><li>• How to use MI in testing and assessment</li></ul>
SKILLS	<ul style="list-style-type: none"><li>• Illustrate the main characteristics of each type of intelligence and each type of learning style in order to better understand their practical application in the STEM learning environment.</li><li>• Describe each of the Kolb's four learning styles and how they cater to student-specific teaching and types of activities.</li><li>• Identify the strengths and weaknesses of the MI and Learning styles models in order to use them in accordance with the STEM learning environment.</li><li>• Identify the students' types of intelligences and their individual learning styles to help you choose approaches that will reach them most effectively.</li><li>• Integrate learning styles and multiple intelligences in STEM courses to foster learners' progress.</li><li>• Develop learning activities for STEM subjects that are in accordance with and best suited for the preferred type of student's intelligence and learning style.</li><li>• Combine the theory of multiple intelligences with the revised Bloom's taxonomy to provide a planning tool for curriculum differentiation.</li><li>• Integrate assessment into learning - give students a chance to play an active role in their assessment.</li><li>• Develop alternative assessment tools and strategies for STEM learning outcomes that evaluate more than one kind of intelligence to give each student a chance to excel and create a positive learning environment.</li></ul>

## CU 2 Learner Centered Didactics: Problem Based Learning, Critical Thinking

### Competence Matrix 2 | **Learner Centered Didactics: Problem Based Learning, Critical Thinking and Collaborative Learning**

#### SUBJECT TITLE

- Principles of Learner-Centered Didactics (LCD)
- Problem-Based Learning (PBL): impact on the learning process
- Critical Thinking (CT) and Learners' engagement with the learning process
- Collaborative Learning: Characteristics and benefits

**CONTACT HOURS (Total).....10**

**WORKLOAD.....20**

LEARNING OUTCOMES "Learner Centered Didactics: Problem Based Learning, Critical Thinking and Collaborative Learning"	
KNOWLEDGE	<p><b>Specialized factual and theoretical knowledge of the principles and applicability of:</b></p> <ul style="list-style-type: none"><li>• Learner-Centered Didactics (LCD) in the learning process,</li><li>• Strategies used in LCD approach to improve the learning process,</li><li>• Importance of Problem-Based Learning (PBL) in training and education,</li><li>• Critical Thinking (CT) and its development throughout lifelong learning,</li><li>• Specific thinking strategies to support learners' critical ability,</li><li>• Critical Thinking in learners,</li><li>• Learners' Collaborative Learning.</li></ul>
SKILLS	<ul style="list-style-type: none"><li>• Use LCD strategies in classroom to adapt the learning environment to learners' characteristics.</li><li>• Create Problem-Based Learning (PBL) exercises for welding/STEM in accordance with the steps, resources and criteria needed for its implementation.</li><li>• Select tools to foster Critical Thinking in learners, integrating them in the learning environment.</li><li>• Plan a Collaborative Learning environment following its three-steps process to improve learners' group dynamics.</li><li>• Use Collaborative Learning experiences to promote communication and cooperation between learners.</li></ul>

## CU 3 Gamification

### Competence Matrix 3 | Gamification

#### SUBJECT TITLE

- Gamification in skills' training
- The full game planning cycle
- An easy-to-use design framework
- Designing games to teach multiple skills
- The lifecycle of a game: what to do after the endgame?
- Extended Reality (XR) training (Virtual Reality and Augmented Reality) in the learning environment: benefits and costs

**CONTACT HOURS (Total).....14**

**WORKLOAD.....22**

LEARNING OUTCOMES "Gamification"	
KNOWLEDGE	<p><b>Specialized factual and theoretical knowledge of the principles and applicability of:</b></p> <ul style="list-style-type: none"><li>• Gamification in education</li><li>• Designing games based on Mechanics, Dynamics, and Emotions (MDE) framework</li><li>• Toolbox of gamification: Mechanics – types of setups, roles, and rules</li><li>• Virtual Reality (VR) and Augmented Reality (AR) technologies</li><li>• Extended Reality (XR) training and real training</li></ul>
SKILLS	<ul style="list-style-type: none"><li>• Identify the potentialities and limitations of gamification to exploit its benefits in accordance with different learning contexts.</li><li>• Apply game design principles to foster skills' development running the whole game design cycle (from idea to redesign).</li><li>• Plan and implement gamification in welding/STEM training activities to promote learners' learning through iteration.</li><li>• Integrate VR and/or AR technologies in game design to foster motivation and planning skills on learners.</li><li>• Develop assessment strategies using gamification to assess learners' achieved learning outcomes.</li><li>• Integrate briefing and debriefing strategies to assess learners' performance based on the dynamics experienced in the game.</li><li>• Apply XR training, VR and AR technologies in teaching, combining virtual and real game mechanics in STEM learning.</li><li>• Generate support and manage competition situations during learning to promote problem-solving dynamics between learners.</li></ul>

## CU 4 Digital Competence and using digital resources

### Competence Matrix 4 | Digital Competence and using digital resources

#### SUBJECT TITLE

- Digital data and digital information
- Digital devices and equipment
- Online environment
- Online and offline digital tools dedicated to learning processes
- Digital communication and networking
- Digital Media

**CONTACT HOURS (Total).....12**

**WORKLOAD.....24**

LEARNING OUTCOMES "Digital Competence and using digital resources"	
KNOWLEDGE	<b>Factual and theoretical knowledge of the principles and applicability of:</b> <ul style="list-style-type: none"><li>• Digital data and digital information</li><li>• Digital equipment</li><li>• Online communication technology and devices</li><li>• Digital Media</li><li>• Digital tools dedicated to learning processes</li><li>• Internet environment, browsers, ethics and threats</li></ul>
SKILLS	<ul style="list-style-type: none"><li>• Use digital data and information</li><li>• Use digital resources for online and offline information to provide learners learning contents in line with training purposes.</li><li>• Create learning contents using digital devices and communication techniques to integrate them on online learning platforms.</li><li>• Connect with online learning communities using various digital devices to carry out networking and sharing of educational materials.</li><li>• Use different digital tools in line with ethical/legal issues to receive information from Media that can be applied to the learning process.</li><li>• Use existent digital tools dedicated to teaching and learning processes to manage training strategies and assess learners' performances.</li><li>• Use the internet as learning and teaching resource in line with the existent rules and principles to avoid risks and threats that can target learners or the learning environment.</li><li>• Use Cloud Computing as a converging technology to work and save the produced information/content.</li></ul>

## CU 5 New Media Didactics: The use of social media and micro-learning

### Competence Matrix 5 | New Media Didactics: The use of social media and micro-learning

#### SUBJECT TITLE

- New Media Didactics: challenges and opportunities
- Microlearning applied to social media
- Communication and cooperation
- Design of microlearning content
- Privacy and Security
- Teaching and learning through application of the new didactical integrated model

**CONTACT HOURS (Total).....10**

**WORKLOAD.....20**

LEARNING OUTCOMES “New Media Didactics: The use of social media and micro-learning”	
KNOWLEDGE	<p><b>Specialized factual and theoretical knowledge of the principles and applicability of:</b></p> <ul style="list-style-type: none"><li>• New Media Didactics: challenges and opportunities</li><li>• Communication and cooperation on social media</li><li>• Design of micro-learning content and its integration into social media</li><li>• Security and privacy on social media</li><li>• Teaching, learning and assessing through application of the new didactical integrated model</li></ul>
SKILLS	<ul style="list-style-type: none"><li>• Apply integrated interactive systems based on combination of social media and micro learning for modernisation of the teaching process.</li><li>• Ensure a high level of communication and cooperation on social media for good interaction during the teaching process.</li><li>• Select data, information and content on social media to integrate them in training activities as part of learners’ routines.</li><li>• Apply GDPR regulations to ensure security of one’s own and learners’ personal identity.</li><li>• Design STEM micro-learning contents, integrating them into social media platforms to improve the learning process.</li><li>• Use micro-learning content and assignments on social media to assess learning.</li><li>• Exchange knowledge and experience on subject area and teaching practice in virtual environment for personal development and growth.</li></ul>

## CU 6 Personal, social and learning competence

### Competence Matrix 6 | Personal, social and learning competence

#### SUBJECT TITLE

- Conceptualizing of Personal, social and learning competence
- The “three dimensions” of the Competence (personal – social – learning)
- Self-awareness (P)/ Self-management (P)
- Time Management in classroom (P)
- Emotional Regulation (P)
- Effective Communication (S)
- Conflict Management (S)
- Constructive Team working (S)
- Learning to Learn (L)
- Dropping out prevention (L)
- Interculturality (L)

**CONTACT HOURS (Total).....11**

**WORKLOAD.....22**

LEARNING OUTCOMES “Personal, social and learning competence”	
<b>KNOWLEDGE</b>	<p><b>Factual and theoretical knowledge of:</b></p> <ul style="list-style-type: none"> <li>• The three dimensions of Personal, Social and Learning Competence, as well as the main elements that are included in this specific concept</li> <li>• Self – awareness and Self-management techniques</li> <li>• Methodologies about Time Management in classroom setting</li> <li>• Effective Communication principles (assertiveness, active listening, etc.)</li> <li>• Emotional regulation rules and how they can be applied in classroom</li> <li>• Conflict Management theories and techniques</li> <li>• Methods to build trust and teamwork in a constructive way</li> <li>• “Learning to Learn” theoretical approach and its appliances</li> <li>• Techniques to prevent drop out phenomenon</li> <li>• Basic principles of “interculturality” (tolerance, diversity, acceptance) and tools to apply it in the classroom</li> </ul>
<b>SKILLS</b>	<ul style="list-style-type: none"> <li>• Integrate theoretical contents in practical exercises through the implementation of technical workshop providing quality and engaging lectures, mentoring, and enabling them access to resources and literature.</li> <li>• Update existent educational methods/techniques, maintaining personal and professional development consistency, to introduce innovations at global level</li> <li>• Maintain awareness of one’s own identity to foster inner balance and stability to regulate and cope with undesirable emotions that may arise during the educational process.</li> <li>• Critically reflect and distance oneself from one’s own perceptions, biases, and stereotypical constructions of reality to promote an effective learning through increasing self-awareness and managing self-limiting beliefs, recognizing unconscious thinking, personal boundaries, and external and internal conflicts.</li> <li>• Listen actively to gain an insight into learners’ needs and strengths showing a willingness and ability to look at learners’ identity, culture and its related aspects and dimensions from different perspectives to promote inclusion.</li> <li>• Express thoughts and emotions to build a trustful relation with learners and at the same time maintain professional boundaries, establishing this way a connection with the learner.</li> <li>• Set up effective learning environment integrating relevant methodologies and techniques for enhancing planning skills.</li> </ul>

## CU 7 Entrepreneurship competence

### Competence Matrix 7 | Entrepreneurship competence

#### SUBJECT TITLE

- Definition of the Entrepreneurship competence
- Relevance of developing the Entrepreneurship competence in learners
- Competence oriented approach for teaching and learning
- What makes an entrepreneurial teacher?
- Practical entrepreneurial experiences – definition
- The 3 competence areas of the Entrepreneurship Competence Framework: Ideas & Opportunities, Resources and Into Action

**CONTACT HOURS (Total).....12**

**WORKLOAD.....20**

LEARNING OUTCOMES “Entrepreneurship competence”	
<b>KNOWLEDGE</b>	<b>Factual and theoretical knowledge of the principles and applicability of:</b> <ul style="list-style-type: none"> <li>• Entrepreneurship competence according to Key Competences for LLL</li> <li>• Competence oriented approach for teaching and learning</li> <li>• Definition of an entrepreneurial teacher               <ul style="list-style-type: none"> <li>• Active methods of engaging learners to release their creativity and innovation</li> <li>• Cooperation and partnerships with colleagues, businesses and other stakeholders</li> </ul> </li> <li>• Practical entrepreneurial experiences</li> </ul>
<b>SKILLS</b>	<ul style="list-style-type: none"> <li>• Recognise EntreComp Framework and its three competence areas to organise and prioritise action in an Entrepreneurship competence-oriented approach</li> <li>• Define what makes a teacher an entrepreneurial one, recalling practical entrepreneurial teaching experiences to prove the efficacy of renewed practices</li> <li>• Design pedagogical improvement strategies aligned with the WELDONE way for teaching STEM topics based on a clear understanding of its strengths/advantages and weaknesses/disadvantages, to improve learning results</li> <li>• Discuss the need for investing time in embedding entrepreneurship key competence development in the subjects, inspiring relevant stakeholders, to get the support needed to implement the WELDONE way</li> <li>• Prepare an action plan to get the resources needed to turn ideas into action, selecting the material, non-material and digital resources needed</li> <li>• Weigh the risks and benefits of embedding entrepreneurship key competence development strategies in training, reflecting on failures (own and other people's) and identifying their causes</li> <li>• Define priorities in uncertain circumstances, with partial or ambiguous information deciding when it is not worth continuing with an idea</li> <li>• Develop a vision and a strategy to embed entrepreneurship key competence development in teaching practices</li> <li>• Set long, medium and short-term goals to embed entrepreneurship key competence development in own training/teaching activity.</li> </ul>

## 5. Implementation of the ToT course

### 5.1 Workshop Model

The Workshop model is the methodological approach that is used to implement the WELDONE ToT course to teachers and trainers from EWF Qualification System (i.e., ToT course Trainees). This model can also be implemented by Trainees with their own learners to motivate them to take an active role in their learning process.

Thus, the Trainers implementing the ToT course are encouraged to select and implement the contents of the CUs that comprise the ToT course in smaller units suitable for focused **workshop sessions**, having a selection of learning outcomes from the CU as starting point (and target) of each session. Exemplary lesson plans are provided in the curriculum.

The Workshop Model consists of sessions comprised in four elements: Opening, Mini lesson, Work time and Debriefing. This section of the Guideline describes each element, to help understand how the Workshop model is implemented. More descriptive information is provided in the *ToT Curriculum & Training Guideline*.

**Table 4 Implementation of the ToT Course – Elements of Workshop sessions**

Workshop Sessions' Elements	Description
Opening	Step one of the Workshop session, where the Trainer breaks the ice, raises Trainees' enthusiasm and focuses on key learning. Here, the Trainer sets clear objectives for the session, with information on what Trainees are expected to be able to do and know by the end of the session (learning outcomes previously selected). The Trainer also provides information on the schedule and rules of the session and assigns tasks to the group while explaining their relevance for the learning process.
Mini lesson	Second step of the session, composed of short instructional or demonstrational periods during which Trainers explain contents or model a strategy they want Trainees to apply or use immediately. Mini lessons should last 10 minutes before they go to the next step of the session.
Work Time	This is the active part of the Workshop session where Trainees "learn by doing" while Trainers actively watch, listen and take notes that can be an added value for the last part of the session. The method used depends on various factors, including subject, type of group, schedule and needs of the Trainees. Here are some possible approaches: <ol style="list-style-type: none"><li>1. Trainees work individually on an exercise and then assess on what they have done;</li><li>2. Trainees work individually and then form pairs/groups to share what they learned;</li><li>3. Trainees work on an exercise together. In this case, the Trainer should specify their degree of freedom and present the exercise as a set of "to-dos" or have them playing specific roles under specific rules (e.g., provide information on the amount of time they must perform a given task);</li><li>4. Trainees form groups to create an assessment test focused on the part of the material allocated to them by the Trainer. Next, they put together the assessment test parts. Then, they take the assessment test individually to understand its applicability. Finally, they share what they learned.</li></ol>
Debriefing	The last step of the session, which should last around 10 to 15 minutes, depending on the contents conveyed and/or on Trainees' needs. Formats of Debriefing: <ol style="list-style-type: none"><li>a. Sharing: Trainees share their conclusions in pairs or in groups;</li><li>b. Presentation: Trainees do a plenary session where they present their main findings to other Trainees individually or in groups (depending on the time available);</li><li>c. Narrative: The Trainer makes a narrative reflection of the session by briefly describing it in a chronological order. After that, Trainees are requested to say what they want to keep/memorize from the activity and to write down what they would change in their performance to achieve better results;</li><li>d. Test: Trainees are asked to make a test after the completion of the Narrative phase not to assess them, but to help them conceptualize key learnings.</li></ol> Rules for Debriefing: <ul style="list-style-type: none"><li>- Objectivity on the feedback provided to Trainees, as it is important to help them adjust their actions to improve their performance and achieve better results;</li><li>- The Trainer must engage in a cooperation environment with Trainees, meaning the Trainer is there to guide Trainees, not to tell them what they must do.</li></ul>



## 5.2 Toolkit

Trainers implementing the ToT Course have access to a toolkit developed in the project under How to get WELDONE (IO3), available on WELDONE website ([weldone-project.eu](http://weldone-project.eu))

The toolkit is comprised of a collection of exercises and activities organised in Categories to help Trainers selecting them for the implementation of the workshop sessions. A glossary of terms and expressions used in WELDONE materials is also provided in this toolkit, where those terms are translated into the languages of the partnership (EN, GR, HR, HU, PT and RO).

Suggested lesson plans are also offered in the WELDONE curriculum.

In this toolkit, trainers have access to links for specific books, articles and websites that can be an added value for the implementation of the ToT course curriculum.

## 6. Assessment Procedures

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**WELDONE project partners designed and developed a set of assessment tools (that can be applied both for conducting formative and/or summative evaluation, based on the following alternative approaches:**

1. Paper/online quizzes (assessment in which both the teacher and the learners receive instant feedback on their progress, and identify areas for development);
2. Product-oriented Projects (assessment in which the trainer analyses and scores the final product achieved, and not the process for developing that product. Thus, it focuses on the characteristics of the product and on its compliance with the product's design);
3. Process oriented Projects (assessment performed in a way in which the person carrying out the evaluation process focuses on the final product);
4. Interviews (this method is based on the collection of information from trainees by the trainer, using a sequence of questions. This interaction between them can be a rich source of information for the trainer about how trainees understand concepts and use procedures they learned from the course. It also provides valuable information and directions for the teacher about the need to modify the course for improvements);
5. Writing (assessment method in which the assessor analyses the idea or argument presented by the trainee as reply to a question. This analysis is based on previously defined criteria that value the significant and relevant aspects of the replies provided by trainees, and on the application of a uniform standard and a marking scheme to all replies to prevent the "halo effect");
6. Art (this type of assessment aims at improving both teachers and learners to reflect on what they have accomplished in a more creative way);
7. Ditch the numbers (a method that provides a set of approaches that do not use numbers for assessing and grading trainees. One example of this method is the use of online journals, or blogs, in which trainees can share with their colleagues their perspectives about what they learned, thus increasing their need to provide high quality information).

The main purpose of having these alternative approaches in assessment is to enable Trainers to better assess creativity, collaboration and other key skills and competences addressed by the ToT course and allow a wider flexibility to trainees to demonstrate their progress and achievement.

For the purpose of assessing Trainees' achievements, trainers will select at least one specific assessment tool to be applied at the end of each CU implementation. These tools can be used by all Trainers, irrespectively of the ATBs implementing the ToT course, to ensure the application of harmonized set of assessment procedures /tools.

EWF LEVEL	KNOWLEDGE	SKILLS	AUTONOMY AND RESPONSIBILITY	EWF QUALIFICATION SYSTEM
EXPERT	Highly specialised and forefront knowledge including original thinking, research and critical assessment of theory, principles and applicability of metal additive manufacturing or welding related technologies.	Highly specialised problem- solving skills including critical and original evaluation, allowing to define or develop the best technical and economical solutions, when applying metal additive manufacturing or welding related technologies, in complex and unpredictable conditions	Manage and transform the metal additive manufacturing or welding and related technologies processes in a highly complex context.  Fully responsible for the definition and revision of personnel's tasks.	WELDING
ADVANCED	Advanced knowledge and critical understanding of the theory, principles and applicability of metal additive manufacturing or welding and related technologies.	Advanced problem-solving skills including critical evaluation, allowing to choose the proper technical and economical solutions, when applying metal additive manufacturing or welding and related technologies, in complex and unpredictable conditions	Manage the applications of metal additive manufacturing or welding and related technologies in a highly complex context.  Act autonomously in decision making and definition in the definition of the metal additive manufacturing or welding and related personnel's tasks.	
SPECIALIZED	Specialised, factual and theoretical of theory, principles and applicability of metal additive manufacturing or welding and related technologies	Specialised range of cognitive and practical skills, allowing to develop solutions or choose the appropriate methods, when applying metal additive manufacturing or welding and related technologies, in common/regular problems.	Manage and supervise common or standard metal additive manufacturing or welding applications and related technologies, in an unpredictable context.  Take responsibility in standard work and supervise the metal additive manufacturing or welding and related personnel's tasks.	
INDEPENDENT	Factual and broad concepts in the field of metal additive manufacturing or welding technology	Fundamental cognitive and practical skills required to develop proper solutions and application of procedures and tools on simple and specific metal additive manufacturing or welding problems.	Self-manage of professional activities and simple standard applications of metal additive manufacturing or welding and related technologies in predictable contexts but subject to change.  Supervise routine tasks and similar function workers, as well as take responsibility for decision making in basic work.	
BASIC	Basic facts, principles, processes and general concepts of welding, joining and related technologies	Be able to check and follow the information on the welding procedure specification, to produce butt and fillet welds in plates and or tubes, and or profiles in a variety of geometries and positions to the required quality and of specified dimensional accuracy	Work under supervision, taking personal responsibility for own actions and for the quality and accuracy of the work produced.	
ELEMENTARY	Elementary principles of welding, joining and related technologies	Able to check and follow the information on the welding procedure or adhesive bounding specification, and to produce weld/joints in a variety of geometries and positions to the required quality and of specified dimensional accuracy	Work under supervision.	AM

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