

Inclusive REskilling and upSkillling Toward competitive Agrifood and veterinary sector: European agenda Strategy

D4.3 Work Based Learning Framework

Document description	This report consists in defining the educational approach of a Work Based Learning framework for acquisition of micro credentials in all industry sectors addressed in the I-Restart occupational profiles. (following EQAVET guidelines).
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Summary

The deliverable 4.3 outlines the development and implementation of a Work-Based Learning (WBL) framework, with a focus on its relevance and application in contemporary educational contexts. It begins by explaining why revisiting a WBL framework is necessary in light of evolving labor markets and educational needs. Deliverable 4.3 describes the approach to creating this framework, guided by the European Commission's recommendations on apprenticeships, including key objectives and criteria for learning, working conditions, and preconditions. A theoretical framework around WBL is then presented, exploring initial frameworks, market needs, and the balance between program content and authentic, people-centred delivery. The deliverable also introduces the I-Restart WBL framework, drawing conclusions from previous projects and outlining a starting point for future work. The integration of this framework within an international micro-credential structure is also explored, with a focus on practical tools for WBL programs. Finally, annexes include examples of internship agreements and assessment instructions.

1. Introduction - Why a work-based learning framework (again)

In the work package 4 the development is about adapting the training methodology to the target groups. This has resulted in 12 Occupational profiles (OPs) in the areas of: Food industry and processing, Animal production, Digital technologies for food industry, e-commerce, online marketing, Veterinary activities, Advanced Entrepreneurial skills and One-Health. Lessons within these OP's, each representing a certain defined skill, including its learning objectives, will lead to a micro credential at successfully concluding the training. Training is flexible and may be a variable number of training hours, depending on the level of the learning module or even because a trainee could complete either a full module or a single lesson (one micro-credential). To foster mobility of students, a work-based framework will be developed fitting in the micro credential structure.

The work-based learning scheme is to be different from the regular practice in all targeted countries, because all countries have one for regular school-based training (VET), whereas this work-based learning framework should allow for acquiring micro credentials even if there is no enrolment in a VET of another formal educational institute. So, there is the problem. Even if a company is to train employees in the workplace to be awarded by micro credentials, the work-based learning framework should allow for it.

The basis of the work-based learning, which this framework will have to serve, is because of a few important reasons why work-based learning will have a prominent role in re- and up-skilling workforce:

- Classroom-based training often fails to simulate real-world conditions.
- Knowledge gained in theoretical settings may not translate into practical competence.
- Workers frequently lack job-specific skills due to generic training approaches.
- Employers report difficulty finding candidates with industry-relevant expertise.
- Seasonal employment leads to inconsistent skill levels among workers.
- High turnover of employment results in repetitive training costs
- Agri-food chain facilities, operating in more remote locations, where access to advanced training resources is restricted

These aspects will have to be addressed in the Work Based Learning (WBL) framework, both for students in vocational or higher education and for workers.

2. Task 4.3: Work Based Learning framework

2.1 Task Description¹

I-RESTART aims at developing upskilling/reskilling learning content, which can be used by VET or company trainers either to be used in a work-based environment or classroom environment under supervision of mentors to acquire micro credentials for the student. As this is to be working in a work-based environment even without the accreditation of formal education and the connected framework of work-based learning (WBL) or apprenticeship, a functional WBL framework is needed.

Therefore, the objective of this task is to develop the work-based learning framework and populate a mentor database, for the work-based period that will be internal/own project-based. AERES with the support of UNITE has taken on this task aiming at structuring the work-based periods encompassed in the curricula and to be implemented in T5.3.

Two functions will be covered in this framework:

1. For students: through an industry project Work-based learning (WBL) supervised by HEI/VET and an industrial mentor
2. For workers: through their own company project: WBL in cVET, mentored by an industrial/private sector employee and/or a VET provider.

As the WBL scheme is not to replace or overrule existing national frameworks for WBL, this scheme developed here will allow for these differences and make use of it when possible. The framework will be flexible to administer to both students and for workers. Students will most of the time use existing national WBL frameworks that could be enriched with this framework or parts of it.

The WBL framework will be designed following the COM (2017) 563 Recommendation on a European Framework for quality and effective apprenticeships. WBL is a unique approach to learning because it integrates different generations and culturally diverse people around something to 'do.' The approach is based on tackling realistic problems with real world application, where the mentor has vast experience in the project dimensions and content, the student is the idea generator, the responsible party, and the driver of the activity and its execution.

VET providers (INFOR, AERES, LVA, CTAEX, AKMI) and HEI (UNITO, WUR, UNITE, AERES, UAOH, AARHUS, UMU) will consult the consortium stakeholders (CONFAGRI, COPA, EIT FOOD, FIAB, ANIA, CONFAGRI PT, FDE, SCOOP, SEVT, GZS, FEDER, CLITRAVI, SCOOP) to finalize a sustainable WBL framework, including a project plan definition with the industrial partner, and the following WBL. The developed schemes will be used by the project countries where the pilot implementation will take place.

Consortium stakeholders will also interact with their network and VET to provide a list of mentors, for a total of 32 mentors from the 8 countries.

Beside this effort, the aim is also to create a mentors' database of offers to be fed into the T5.4 and shared. The gathering process will be GDPR compliant and use an opt-in process.

AERES with the support of UNITE and AARHUS will create a framework to allow workers to choose an up/reskilling module, define a project and be followed by a mentor from their industry. This will be implemented in Denmark, France, Austria, Greece, Italy, Portugal, the Netherlands and Spain.

¹ Summary of Task description in Project document I-RESTART (page 68)

2.2 Approach of Task

As described in the project document, the objective of this task is: to design a Work Based Learning framework that will be used in the countries where the pilot implementation takes place. This Work Based Learning framework must be able to allow for flexibility of the micro-credential structure of the available Occupational profiles. This may be:

1. a part of a curriculum for students supervised by VET or HEI institutions,
2. or secondly by supervision of companies in the sectors addressed in this I-Restart project. On top of that, Task 4.3 also would provide for the development of a mentors database in which mentors (four for each of the eight countries) of the project partnership are to facilitate selection of micro-credentials of interest. Only the 32 assigned mentors of project partners will be made public. Mentors from outside the project partnership cannot be made open for public domain.

As to the first of these two points, existing apprenticeship systems must be taken into consideration, because all countries have their own system of apprenticeship. I-Restart has no intentions to replace any of these systems, but rather to use it as a basis to add in favor of students to acquire micro-credentials. The former FIELDS project has found existing apprenticeship schemes in the countries as well as the legislation and understanding of the term 'apprenticeship' are very different between countries². It was decided a common apprenticeship scheme is not realistic. The I-Restart project is aiming to develop a flexible Work based learning framework that may be used in all the different approaches to apprenticeship. In the report from the FIELDS project apprenticeship systems have been described in the different countries, concluding there is not a firm common ground on which a WBL framework may be built. Therefore, the aim is to follow the basic principles of establishing work-based learning and propose possible solutions to be used for establishing it in the various regions and situations throughout Europe.

As the piloting of the developed training content within work package 4 will need a Work based Learning framework, with different target groups from VET students to professional farmer advisers. At the same time, we do not want to define a framework interfering with the national laws and regulations and still provide enough tools in the framework to ensure quality. This is further explained in paragraph 5.

As mentioned before the WBL framework will be designed following the COM (2017) 563 Recommendation on a European Framework for quality and effective apprenticeships. This needs a bit of an explanation.

3. European Commission recommendation on apprenticeships

The COM (2018/C 153/01) is a proposal for a Council Recommendation on a European Framework for Quality and Effective Apprenticeships³. The following two paragraphs will set out the criteria which, according to COM (2018/C 153/01) lead to high-quality apprenticeships. These criteria are divided between criteria for working and learning conditions on the one hand and criteria for preconditions on the other. These criteria have been taken into consideration in the proposed apprenticeship scheme which will be used in the training material to be developed.

² Ref: Apprenticeship schemes in European countries, a cross-nation overview (2018), CEDEFOP.
<https://www.cedefop.europa.eu/en/publications/4166> (p 23, table 2)

³ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018H0502%2801%29>

3.1 Objectives and criteria

The general objective of COM (2018/C 153/01) is to improve the employability and personal development of apprentices and contribute to the development of a highly qualified workforce whose skills and qualifications match the needs of the labour market.

The specific objective is to provide a coherent framework for apprenticeships based on a consensus on what exactly determines quality and effectiveness, considering the diversity of vocational education and training in Member States.

This apprenticeship scheme recommendation covers both the seven criteria for learning and working conditions and the seven criteria for support of the setup and functioning of quality and effective apprenticeships.

3.2 Criteria for learning and working conditions

Good and meaningful apprenticeship should meet several criteria. These are criteria that ensure the apprentice, and the workplace are safe and that the apprentice can achieve learning. There are also criteria that ensure that an acceptable level of quality and effectiveness in apprenticeship is achieved in a country.

Written agreement

Before the start of the apprenticeship a written agreement should be concluded to define the rights and obligations of the apprentice, the employer, and where appropriate the vocational education and training institution, related to learning and working conditions.

Learning outcomes

The delivery of a set of comprehensive learning outcomes defined in accordance with national legislation should be agreed by the employers and vocational education and training institutions and, where appropriate, trade unions. This should ensure a balance between job-specific skills, knowledge and key competences for lifelong learning supporting both the personal development and lifelong career opportunities of the apprentices with a view to adapt to changing career patterns.

Pedagogical support

In-company trainers should be designated and tasked to cooperate closely with vocational education and training institutions and teachers to provide guidance to apprentices and to ensure mutual and regular feed-back. Teachers, trainers and mentors, especially in micro-, small and medium-sized companies, should be supported to update their skills, knowledge and competences to train apprentices according to the latest teaching and training methods and labour market needs.

Workplace component

A substantial part of the apprenticeship, meaning at least half of it, should be carried out in the workplace with, where possible, the opportunity to undertake a part of the workplace experience abroad. Considering the diversity of national schemes, the aim is to progress gradually towards that share of the apprenticeship being workplace learning.

Pay and/or compensation

Apprentices should be paid or otherwise compensated, in line with national or sectoral

requirements or collective agreements where they exist and taking into account arrangements on cost-sharing between employers and public authorities.

Social protection

Apprentices should be entitled to social protection, including necessary insurance in line with national legislation.

Work, health and safety conditions

The host workplace should comply with relevant rules and regulations on working conditions, in particular health and safety legislation.

3.3 Criteria for preconditions

Regulatory framework

A clear and consistent regulatory framework should be in place based on a fair and equitable partnership approach, including a structured and transparent dialogue among all relevant stakeholders. This may include accreditation procedures for companies and workplaces that offer apprenticeships and/or other quality assurance measures.

Involvement of social partners

Social partners, including, where relevant, at sectoral level and/or intermediary bodies, should be involved in the design, governance and implementation of apprenticeship schemes, in line with national industrial relations systems and education and training practices.

Support for companies

Financial and/or non-financial support should be envisaged, particularly for micro-, small and medium-sized companies, enabling cost-effective apprenticeships for companies, taking into account, when appropriate, cost-sharing arrangements between employers and public authorities.

Flexible pathways and mobility

To facilitate access, entry requirements for apprenticeships should consider relevant informal and non-formal learning and/or, if relevant, the accomplishment of preparatory programs. Qualifications acquired through apprenticeships should be included in nationally recognised qualification frameworks referenced to the European Qualifications Framework (7). Apprenticeships should allow access to other learning opportunities, including at higher education and training levels, career pathways and/or, where relevant, the accumulation of units of learning outcomes. Transnational mobility of apprentices, either at the workplace or education and training institutions, should be progressively promoted as a component of apprenticeship qualifications.

Career guidance and information

Career guidance, mentoring and learner support should be provided before and during the apprenticeship to ensure successful outcomes, to prevent and reduce dropouts as well as support those learners to re-engage into relevant education and training pathways. Apprenticeships should be promoted as an attractive learning pathway through widely targeted awareness-raising activities.

Transparency

The transparency of, and access to apprenticeship offers within and between Member States should be ensured, including with the support of public and private employment services as well as other relevant bodies, and, when appropriate, by using Union tools such as EURES as provided for in the EURES regulation.

Quality assurance and tracking of graduates

Quality assurance approaches should be in place taking into account the European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) (8), including a process allowing a valid and reliable assessment of the learning outcomes. The tracking of employment and career progression of the apprentices should be pursued, in accordance with national and European legislation on data protection.

4 Theoretical frameworks around WBL

The WBL framework is intended as a generic model for third parties to be used as a guide to establishing WBL in any possible situation using the I-RESTART Occupational profiles. As explained in the previous chapters the framework must allow for the different systems of quality assurance and accreditation in the EU. Therefore, the framework proposed in this document is a theoretical framework which will provide the minimum requirements for a quality assured work-based learning. But each actor in private or public organisations will have to implement it in their own practice. If for example the minimum requirements are not met in some national training, it could be used as to how to improve or enhance it.

So therefore, it is actually a framework proposed here, which will have to be completed with details in each regional situation, public or private.

In this chapter the basic assumptions are described. Assumptions based on literature, previous results, experience and intentions.

4.1 Initial framework

Work-based learning especially requires integration between theory and practice. In WBL, any program is something learner's experience as an invitation to change (Billet, 2009, p.835)⁴. The initial framework considered to develop a new WBL program should contain all the stages of the typical education program development cycle, namely, planning, designing, delivering and evaluation.

However, as this concerns WBL we will highlight understanding of the market needs separately from the planning stage, as this need should be the essential driver behind a WBL program (Fig. 1).



Figure 1: Conceptual Framework: Developing a WBL Programme

⁴ Journal of Higher Education Skills and Work-Based Learning (6) 1 (pp. 35-54)

4.2 Market need

Determining market needs should be the first step when planning the WBL scheme. For example, this has been foreseen in the I-RESTART project planning during the matchmaking process between industry and VET/HEI. Through this contact the WBL programme is designed, and it is at this point that the understanding of the student's background must prevail. The VET/HEI institution must guard this

This is followed by the delivery stage, where the mentors/teachers, tutors and students are the main resource. The Authenticity of experiences designed in the program depends on them, and they are essential for the success of a quality WBL program. The last stage of the cycle, Evaluation, is carried out between the people involved, and this stage is the moment for reflection on how different expectations have been met in the program. The participating organisations meet again and, taking into account the voices of the stakeholders, they implement the improvements. Therefore, regular contact between participating organisations is essential. In some sectors (i.e. Veterinary sector) there is experience in this way of developing quality work-based training. We will use this experience to set a standard in the aimed work-based learning framework.

As stated above, market needs should be what drives WBL. In other words, a recognised lack of skills or competencies must be detected in the labour market. This lack of skills is reported either by potential students who need to enhance their qualifications, or by employers (Participating organisations). For example, during I-RESTART skills and needs identification activities (WP3 in general) in 2023 clearly a list of important lacking skills has been made, based on national and EU focus groups, the national and EU scenario analysis and the survey analysis. These listed skills have been transformed in twelve (12) occupational profiles, which along with their designed curricula, are the basis under the proposed WBL framework in this report.

4.3 Delivering the programme: between programme content and people (Authenticity)

Work-based learning must take place in real, or at least well-replicated, work situations. Practice settings offer a range of experiences that are authentic in terms of acting out an occupation in particular work situations (Billett, 2009, p.838). Some key strengths of learning through workplace experiences are, (a) access to authentic work activities; (b) observation and listening; (c) access to more experienced co-workers; and (d) practice.

To enhance the effect of this Authenticity some considerations must be considered to safeguard the balance between Programme and People. Firstly, experiences, although real, are not learnt in the same way. Learning depends on previous experiences. Consequently, it is important to consider both the provision of experiences and individuals' take-up of those experiences (Billett, 2009, p.835). In this vein, a UK program manager reported the following good practice: "The philosophy of the program is one of self-directed learning, allowing participants to explore areas of professional interest to develop evidence-based practice and new ways of thinking within the mobility sector".

Secondly, experiences are also goal-directed. This means that practice terms must be established to enable a previously planned objective to be learned. In one of the Spanish cases, "Once a term the academic company mentor goes to the company to make an assessment along with the student and

the company mentor. All three sign a document where the assessment and new objectives for the student are established”.

Teachers or mentors are the learning mediators and are responsible for the learning process and the required conditions. The role of these actors is essential and widely recognised. The educational material developed in WP4 is to be used by the teachers or mentors for building a relevant training program for the students in the various situations with various needs for skills.

Understanding the conditions laid down in this chapter is essential before we can move to defining a work-based learning framework.

5 The I-Restart Work Based Learning framework

Before going to the setup of a work-based learning framework, it is essential to connect to existing initiatives within the EU. Previous work has been done by important projects, such as CEDEFOP, FIELDS and InnovatiVET.

5.1 Conclusions from previous projects

In 2018 CEDEFOP published the results of a study on apprenticeship schemes in the EU (<https://www.cedefop.europa.eu/en/publications/4166>). The study was largely based on data collected in 2016. The study includes mapping of apprenticeship schemes with a stable/valid legal basis at system level, or mainstream schemes, in the EU Member States, Iceland and Norway; it identifies and analyses the different purposes and functions associated with the schemes and investigates whether and how they differ in terms of organisation. This report indicates the fundamental differences among apprenticeships in Europe that account for the absence of a shared understanding of the concept of apprenticeship. The design of apprenticeship schemes seems to respond to two different and evolving purposes and functions of apprenticeship, the analysis of which may bring new insights into EU- and national-level policy debates.

The report distinguishes three different lines in which apprenticeships occur in education and training systems in European countries. These lines are further broken down by degree of occurrence, length and distribution of responsibility within the apprenticeship.

- A. Apprenticeship as an education and training system (CEDEFOP function group A)
 - **The apprenticeship system is distinct from the school-based VET system**
- B. Apprenticeship as a type of VET delivery within the formal VET system (CEDEFOP function group B)
 - **Learning in an educational institute and in an apprenticeship setting complement each other.**
- C. Apprenticeship as a hybrid system (CEDEFOP function group C)
 - **Specific apprenticeship programs, non-formal, aiming for social inclusion and employment for youngsters who do not fit in the formal systems.**

The work-based learning framework to be defined here should comply with all the above apprenticeship systems. It needs to be flexible and adaptable to all regional practices of vocational education and training as well as higher education. The aimed WBL framework is not to contradict or replace any of the national practices, but rather to enhance and complement them.

The Erasmus FIELDS project has drawn conclusions as to how to go about with the different systems. They came to the following general conclusions. The apprenticeship schemes of most of the partner countries in FIELDS are categorised as Functional Group B (CEDEFOP, 2018). Group B contains the apprenticeship schemes as a type of VET delivery. That means that most of the countries in the I-RESTART project practice this type of Apprenticeship scheme. However, they should always meet the criteria of COM (2017) 563 to ensure quality.

The FIELDS project has taken care of this by planning 360 hours work-based learning in the curriculum of 690 hours in total. Assignments, which are part of the training materials, can be assigned to learners to stimulate extra content to apprenticeship. I-Restart will have to contribute to this by developing assignments for students in practical work as part of the content of the occupational profiles.

The InnovatiVET project, co-funded by the EU-Erasmus+ program, concludes the following in their chapter WORK-BASED LEARNING IMPLEMENTATION: TIPS AND PRACTICAL SOLUTIONS:

“Based on the experiences highlighted here by the project partners, the theoretical studies and the presented Model of Integrative Pedagogy the following tips and practical solutions have been identified to facilitate work-based learning implementation.

Policies

- In work-based learning, such as apprenticeship training, students acquire the knowledge and competencies that employers need. To facilitate this, teachers need to adjust the balance of theoretical education and practice in the companies so that the students can keep up with the pace of upskilling.
- New forms of agreements between employers, schools and students add flexibility to Work-Based Learning. More simple and practical agreements may help in finding new locations for work-integrated learning for students, especially in smaller municipalities.
- It is important to consider the principle of lifelong learning, i.e. by offering learners the possibility of taking part of a qualification now and returning to the VET system at a later point in time.
- It is important that all stakeholders in education and the world of work participate in the development of innovation in vocational education and training. Such stakeholders include e.g. students, employers, and entrepreneurship organizations, federations of enterprises, teachers and researchers.

Practices

- Students need to learn how to develop as a learner. Teachers can help in this by offering them work-related challenges for creative problem solving. One way of doing this is to set the whole school a large multifaceted problem case to solve, with relevance to many subjects. Another way could be by incorporating relevant skills such as digital literacy to work-based learning.
- For students, social participation in a work community or organization may be a great source for motivation. Work-Based Learning may give a chance to work together with high-skilled professionals and to learn what is important in companies currently.
- Learners in work-based learning benefit from reflection with other learners and with teachers. It is important that teachers augment the learning experiences with the learners. “

5.2 I-Restart starting point

Within the I-Restart project we will build on this project by keeping the standard the same as in the previous FIELDS project. Our starting point here is to develop a general work-based learning framework applicable to EU VET's, with respect to the previous work done in this field. To start with the basics, we first need to set the outlines of a work-based learning framework.

A **work-based learning (WBL) framework** is an educational approach that integrates academic learning with practical, hands-on experience in a real-world work environment. It allows students or trainees to apply theoretical knowledge gained in the classroom, either virtually or physically, to workplace situations, enhancing their skills, employability, and professional development. For a framework allowing for regional differences in approach of WBL there are some common key features. These key features include:

- **Agri-food Industry/companies engagement:** Students work with businesses or organisations belonging to the entire agri-food chain in their field of study.
- **Practical learning:** Combines on-the-job training with academic or vocational instruction.
- **Mentorship:** Participants are often paired with businesses or organisations belonging to the entire agri-food chain professionals for guidance and feedback.
- **Skill development:** Focuses on building both technical and soft skills relevant to the agri-food system.
- **Assessment:** Performance is typically evaluated based on both work output and academic achievement.

WBL frameworks include internships, apprenticeships, cooperative education programs, and work placements, and are designed to bridge the gap between theoretical education and professional practice. The WBL framework for the learning content created within the I-Restart project is to allow specifically for acquiring micro-credentials, in the context of an in-company training as well as training and education in a VET/HEI situation.

5.3 Work based learning framework in an international micro-credential structure.

Work-based learning especially requires integration between theory and practice. As said earlier, there is a clear focus on the practical aspect, but we should not forget the theoretical background in WBL in micro-credential context. If this happens the program, simply becomes a reproductive procedure closer to company training sessions than an HEI/VET program. Now there is nothing wrong with a company training session, but very few of these training sessions are transferrable or portable even within the sector. Transparency and transferability are a necessary condition in the light of EU wide re-/ up-skilling.

Therefore, a functional WBL framework should meet a few essential conditions which make it transparent, transferrable, verifiable, assessable and applicable to a micro-credential structure. Each of these conditions should be met before a WBL framework can be made operational. An operational WBL framework has ticked all the conditions in the list in the next paragraph and will have all information online available at least for a student or a trainee. Students must be able to be informed about the Work based learning in the micro-credential context before enrolling in a training program.

In the next section the conditions are listed.

5.3.1. Conditions for a functional WBL framework

These conditions should be met in a WBL framework in a step-by-step approach:

1. Needs Assessment:
It is not necessary to discuss this in depth because this has already been done during the skills and needs identification activities as part of WP3 (see also in par. 4.2 of this document). The results have led to 12 occupational profiles (OPs) which have been reported in due deliverables.
2. Curriculum Development:
Curriculum development is specifically the responsibility of the educational institute (VET/HEI) in case of formal education. In case of informal training this should be the responsibility of a community (for the argument of transferability) of businesses in a certain sector the industry partnership to define a curriculum or qualifications needed. I-Restart is not developing curricula, but OP's and their content that may be used in educational driven curricula or business training programs. But in both cases there must be some organisation responsible for some kind of curriculum development.
3. Work Placement Opportunities:
The next step is formalising partnerships with farms, processing facilities, and related businesses across the EU to provide students with hands-on work experience. These workplace opportunities will be made accessible in a database of accredited companies. NOTE: all related businesses should be accredited before placements. Even in informal training some widely (intra sector) accepted accreditation is required to guarantee quality and transferability of WBL. Much of this will be done separately in Task 5.3 and Task 5.4 and will be reported in the due deliverables of the I-Restart project.
4. Mentorship and Guidance:
Mentorship and guidance is of the essence in the context of a WBL framework in the micro-credential structure. Mentors and guides are appointed to be responsible for collection of relevant learning material to enable the student to learn and to gain competences on an adequate level so they will pass assessments. Mentors are defined as responsible for the learning process and guides as the in-company supervisor. In case of internships as part of an educational program, the educator is responsible for the level and training material and assigning a mentor. A mentors database will be a separate deliverable in this task.
5. Formulation of relevant assignments through which students can practice and develop competences before assessments. These assignments are different for all distinguishing sectors and companies. It is impossible to develop a comprehensive set of assignments centrally in Europe. We must consider this the responsibility of the mentors or at least the institute responsible for awarding the micro-credentials, such as a VET/HEI or an in-company sectoral training program. In the I-RESTART project meeting in September 2024 it was decided that it should be up to the teacher to provide the educational content, available from the training content on the I-RESTART Moodle platform, to relevant assignments and instructions.
6. Assessment and Evaluation:
For most of the I-RESTART learning content, an assessment method is suggested which is uploaded in the lesson's assessment folder. In addition to that, companies or educators may want to perform a robust assessment system to evaluate students' performance both during their work placements and through periodic assessments of their theoretical knowledge. Recommendable then is to use a combination of practical demonstrations, written exams, presentations, and project work to assess students' understanding and

proficiency in relevant skills. Work based assessments should be done by an accredited assessor, in combination with the workplace mentor. The accreditation of the assessor and mentor is the responsibility of the same institute responsible for the curriculum of the training program. That may also be an external body with authority to accreditation.

7. Quality Assurance and Monitoring: Establishment of mechanisms for quality assurance and continuous improvement, including regular reviews of the curriculum, feedback from industry partners, and evaluation of student outcomes. Monitoring of students' progress and performance needs to be implemented closely to identify any areas for improvement or additional support. This may simply be done by regularly (yearly) visiting the accredited businesses by the accredited assessor. The assessor should then complete an evaluation form.

So, for the sake of clarity: the WBL framework therefore distinguishes three important actors:

1. The student/learner,
2. The educator or educational entity (initiator and responsible party for the formal or informal training).
3. The host company (sometimes the same as the educator).

Formulation of relevant assignments (step 5 in the above list followed by step 6, assessment) and preparing for assessments is an important issue. As mentioned earlier the educational institute should give directions as to how to select and formulate the practical assignments. It may be helpful to formulate relevant assignments as part of the curriculum outlines. There are various ways of doing this, but here are some suggestions.

The educator responsible for the training will have to complete something similar to the grid below. In this example the Lesson-code and learning objectives are copied from the designed curricula in Task 4.2. The mentor/teacher will have to complete the last two columns: work-based assignments/exercises and assessments criteria. This is to be made available to the students, to prepare them for the assessments. This must be communicated to the student even before they enrol in the training program.

Table 1: example of a grid to be completed before the training.

	Lesson code	Learning objectives/- outcomes	WB exercises/ assignments/ realistic problems	Assessment criteria	Remarks for the writer / coach / mentor
1	A395_Meat_Practices	Identify common practices in meat/dairy production (housing systems, handling and transportation, feeding practices, and slaughter methods) and how these	Describe the animal housing system and identify how this impacts animal welfare (positive or negative)	Proof of a correct relation between housing system and animal welfare	

		practices can impact animal welfare			
2					

Explanation of the grid: In this grid the Lesson code is the code from the curricula developed in Task 4.2 with the corresponding learning objectives. Developers of a WBL training can find the necessary training material there. In this example the last three columns are completed with a relevant work-based assignment which is to be executed under scrutiny of the mentor. Assessment criteria are mentioned in the last column to enable correct assessment.

In addition to this grid an explanatory text may be written to create more clarity about the assignments and the assessments. But the information should be structured and clear, so it is enlightening rather than confusing the student.

5.4 Practical tools for WBL programs

Here are some practical tools for operating a WBL program. Firstly, some tips on how to communicate between the responsible party for the training (VET/HEI of the company capable of having responsibility for the sector) and the student, the mentors and the assessors.

Communication to the student is most important. It should be clear what the training is about, what the content is and what the assessment criteria are. As a base for this communication the grid in table 1 may be used. But this will need a very clear explanation in a document with the grid. The student should have no trouble at all to understand this. The document should have explanations on the content of the training, the objectives and the outcomes, as well as the assessment criteria. There should be explanations on the assignments and exercises and communication with the mentor. There should be information on the contract between the student and the company or VET/HEI. Students need clear communication.

Before starting the WBL program there must be a contract between the host company, educator and student. See ANNEX 1 for an example of how such a contract may look like. In the contract three parties are mentioned. In case of training under responsibility of the company, the training institute is omitted from the contract. We need to account for that because in some sectors this is practiced, but obviously there is a great preference for involving a VET/HEI educator. So generally, this example contains all the elements a training contract should have.

Assessors need instructions as well. A pitfall for in company assessors is they want the student to

succeed and therefore have an impulse to help them during assessments. For that and for other reasons there should be some communication in line of ANNEX 2 (see annexes).

In figure 2 the process is depicted in a simple way.

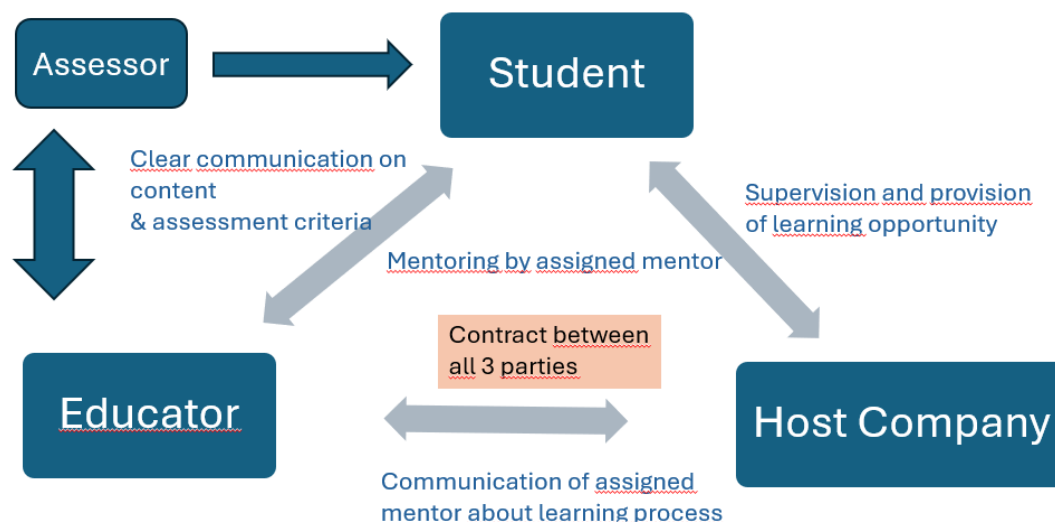


Figure 2: Process of Work Based Learning involving the involved actors.

Lastly additional remarks and instructions may be provided on the assessment criteria to enable the assessors to make uniform decisions on a pass or a failure for a micro-credential. Advisable would be to train the assessors together or even sometimes observe other assessments to unify the way criteria are assessed. But clearly this is the responsibility of the accrediting organisation.

5.5. The mentors database

Included in the WBL program is a mentors database in which mentors are identified with contact details for students and workers to get access to a mentor to help them to get an appropriate training for their individual situation and to guide the learning pathway for the learner until an assessment for micro credentials.

The database now has a minimum number of available mentors, but this will grow gradually, and the database will be updated as a part of the tasks 5.3 and 5.4. For now, the mentors chosen are in close contact with the I-RESTART project national teams because it is necessary to monitor the development closely for the coming years. The teams may change the way of working or the mentors as they see fit to enable students better to get access to a learning situation.

The mentors' database will be made available as a live document which will be added to in the next few years. A copy of the current table however is also presented in this document as annex 3 to this document.

Annex 1: an example of an agreement for WBL / internship

Minimum requirements for an agreement. It may be modified if there is no educational institute involved. Internship may be changed in any which word is appropriate in the circumstances.

WORK BASED LEARNING AGREEMENT

Between

[Name of Educational Institution], located in [city], hereinafter referred to as **the Educational Institution**, represented by [name of contact person], and

[Name of Host Company], located in [city], hereinafter referred to as **the Host Company**, represented by [name of contact person], and

[Name of Intern], residing in [city], hereinafter referred to as **the Intern**.

WHEREAS:

- The Intern is enrolled in a program at the Educational Institution and is required to complete an internship as part of their studies;
- The Host Company is willing to offer the Intern an internship position;
- The parties wish to lay down the rights and obligations during the internship in writing.

AGREE AS FOLLOWS:

Article 1: Purpose of the internship

The purpose of the internship is to provide the Intern with practical experience in the context of the **[name of program or comprehensive description of purpose]**.

Article 2: Internship period and working hours

1. The internship period will run from **[start date]** to **[end date]**.
2. The Intern's working hours will be from **[time]** to **[time]**, for **[number]** days per week.

Article 3: Supervision

1. The Host Company appoints **[name of company supervisor]** as the company supervisor.
2. The Educational Institution appoints **[name of school supervisor]** as the school supervisor.

Article 4: Internship compensation

1. The Intern will receive an internship allowance of **[amount]** per month/week, if applicable.
2. If applicable, travel expenses will be reimbursed according to the Host Company's policy.

Article 5: Insurance and liability

1. The Educational Institution will provide liability insurance for the Intern during the internship.
2. The Host Company is responsible for providing a safe working environment and will inform the Intern of the applicable safety regulations.

Article 6: Confidentiality

The Intern is obligated to maintain confidentiality regarding any confidential information obtained during the internship. This obligation remains in effect even after the internship has ended.

Article 7: Evaluation and assessment

1. The company supervisor will periodically evaluate the Intern's progress.
2. At the end of the internship, the company supervisor will prepare a final assessment, which will be shared with the school supervisor of the Educational Institution.

Article 8: Absence

In the event of illness or absence, the Intern must notify both the Educational Institution and the Host Company immediately.

Article 9: Termination of the agreement

1. This internship agreement may be terminated prematurely by written notice with one month's notice period by the Educational Institution, the Host Company, or the Intern.
2. Immediate termination is possible in cases of serious misconduct or underperformance by the Intern, after consultation between the involved parties.

Article 10: Final provisions

1. Any changes to this agreement will only be valid if made in writing and signed by all parties.
2. This agreement is governed by law.

Signed in [city], on [date]:

For the Educational Institution:

Name: _____
Position: _____
Signature: _____

For the Host Company:

Name: _____
Position: _____
Signature: _____

For the Intern:

Name: _____
Signature: _____

Annex 2: Instructions for assessments

Introduction

To enable an objective assessment, the assessment of the vocational test is done by (at least) two assessors, the so-called four-eye principle. Preferably one assessor of a VET/HEI and one from business (not the mentor). Assessors are expected to be experts as assessors and in the relevant professional context. Assessors should have some kind of recognized accreditation.

Tasks assessors

Assessors observe, ask questions and assess. They are not allowed to offer help; it is an exam. Before the vocational test starts, they check whether the exam can be taken as described in the test plan. In case of observed deviation(s) from the testing plan or in case of unforeseen circumstances that prevent the exam cannot take place; the assessors will not establish a provisional result of the appeal test. determined. The examination board will consider the deviation(s) observed. The examination board decides about the follow-up.

Assessments

The assessors observe the candidate in the performance of the vocational test. In the assessment form it is indicated at which parts (work processes/assignments) the assessors observe. They make notes of what they have seen. For some parts it is not possible to arrive at an assessment through observation alone. During the execution of the assignments in that case the assessors can ask questions.

After the practical part an exam interview is held. In the exam interview, at least the topics described in the exam interview section are covered. In the exam interview, parts that were covered in the practical part can be questioned by the assessors. For example, why the candidate made a certain choice during the performance. If assessors cannot reach a judgement for some parts only through observation, this can also be addressed in the examination interview.

The candidate can also explain on his own initiative what he has done in the practical part. The discussion points from the exam interview can be included by the assessor in the explanation on the assessment form. For vocational exams with a long implementation period, assessors will not be able to be present for all assignments. The school's examination board determines which components the assessors must be present for. For the parts where the assessors are not present, they can arrive at an assessment based on, for example, logbooks, examination interviews, advice from the practice trainer/the other assessor or video recordings. The school agrees to this with the assessors.

Instruction assessors

The assessors:

1. observe the candidate while performing the assignments and take notes on the candidate's actual performance of the assignment.
2. assess for each work process whether the performance demonstrated by the candidate meets the standard for sufficient and give the judgement of sufficient or insufficient for each work process.
3. Arrive at a joint preliminary result. If they disagree, they each submit their assessment separately to the school's examination board.

Annex 3 Mentors database initial copy

Country	I-restart partner	Mentors employer	Business Address	Town	Website	Mentor name	e-mail	expertise
Italy	INFOR	Infor Elea	Via Rivoira Don, 24	San Secondo	inforelea.academy	Carlo Colomba	carlo.colomba@inforelea.academy	Business Management, entrepreneurship
Italy	UNITE	University of Teramo	Via R. Balzarini 1	Teramo	www.unite.it	Paola Pittia	ppittia@unite.it	Food technology/processing, food product design, R&D, material science
Italy	INFOR	Infor Elea	Via Rivoira Don, 24	San Secondo	inforelea.academy	Laurent Samou	dir.labtours@inforelea.academy	Business Management and Development, entrepreneurship,
Italy	UNITE	University of Teramo	Via R. Balzarini 1	Teramo	www.unite.it	Marco Faieta	ppittia@unite.it	Food technology/processing, food quality
Spain	UMU	Universidad de Murcia	Facultad de Veterinaria	Espinardo, Murcia	um.es	Gaspar Ros	gros@um.es	Veterinary activities, human nutrition, food safety and security, OneHealth
Spain	CTAEX	Centro Tecnológico Nacional Agroalimentario	Ctra. Villafranco-Balboa	Badajoz	www.ctaex.com	Ana Serrano	aserrano@ctaex.com	food technology, food quality
Spain	FIAB	Federación Española de Industrias de Alimentación y Bebidas	Velazquez, 64- 3º	Madrid	www.fiab.es	Concha Ávila	c.avila@fiab.es	Business Management and Development, entrepreneurship, food processing
Spain	SCOOP	Cooperativas Agro-alimentarias	Calle Agustín de Betancourt	Madrid	https://www.agro-alimentarias.coop/	Carmen Martínez	martinez@agro-alimentarias.coop	Training area
Austria	LVA	Lebensmittelversuchsanstalt	Zaunergasse 1-3, 1030	Vienna	https://www.lva.at/	Julian Drausinger	julian.drausinger@lva.at	food technology, food quality, food safety
Austria	LVA	Lebensmittelversuchsanstalt	Zaunergasse 1-3, 1031	Vienna	https://www.lva.at/	Lisa Meidl	lisa.meidl@lva.at	food quality, food safety, food chemistry,
Austria	EBVS			Vienna	https://www.ebvs.eu/about-ebvs	Julie Rosser	ceo@ebvs.eu	Veterinary,
Austria	ISEKI	ISEKI-Food Association	Lindengasse 56/18-19, 1070	Vienna	https://www.iseki-food.net/	Luis Mayor	luis.mayor@iseki-food.net	Food processing, food quality, food safety
Denmark	AU Food	Aarhus University	Agro Food Park 48, 8200	Aarhus	https://food.au.dk	Milena Corredig	mc@food.au.dk	Research and Development (R&D), Food Processing, Science, Dairy Science, and Materials Science
Denmark	AU Food	Aarhus University	Agro Food Park 48, 8200	Aarhus	https://food.au.dk	Konstantina Ntrallou	konstantina.ntrallou@food.au.dk	Food technology/processing
Denmark	AU Food	Aarhus University	Agro Food Park 48, 8200	Aarhus	https://food.au.dk	Sandra Beyer Gregersen	sbg@food.au.dk	Food science

Country	I-restart partner	Mentors employee	Business Address	Town	Website	Mentor name	e-mail	expertise
Denmark	AU Food	Aarhus University	Agro Food Park 48, 8200	Aarhus	https://food.au.dk	Luis Miguel Jimenez Munc	luisjimenez@food.au.dk	Food science and plant based innovation
Greece	AKMI International	Akmi	23 Evmolpidon Str., 118	Athens	https://akmi-international.com/	Stavroula Tsingou	tsigou@akmi-international.com	Agricultural Economics and Rural Develop
Greece	AKMI International	Akmi	23 Evmolpidon Str., 118	Athens	https://akmi-international.com/	Labros Gitsas	gitsas@akmi-international.com	Agri-Business and Strategic Product Design
Greece	AKMI International	Akmi	24 Evmolpidon Str., 118	Athens	https://akmi-international.com/	Giola Papatsori	papatsori@akmi-international.com	Mechanical Engineering-Renewable Energ
Greece	AKMI International	Akmi	25 Evmolpidon Str., 118	Athens	https://akmi-international.com/	Xenofon Pasoulas	pasoulas@akmi-international.com	Geographer -GIS Expert-Finance
Netherlands	Aeres	AFC	Penning 6	Emmeloord	https://agrofoodcluster.com/	Cor van Veldhuizen	c.vanveldhuizen@afc.nl	plant science
Netherlands	Aeres	Aeres	Barnseweg 3	Barneveld	https://www.aeresmbo.nl/locaties/barn	Michel van Barneveld	m.c.van.barneveld@aeres.nl	Specialist livestock
Netherlands	Aeres	Aeres	Barnseweg 3	Barneveld	https://www.aeresmbo.nl/locaties/barn	Sjaak Vels	s.vels@aeres.nl	Biological farming
Netherlands	Aeres	PEC	Wesselseweg	Barneveld	https://www.poultryexpertisecentre.com	Anne Jo Smits	a.smits@aeres.nl	Poultry science
France	INRAE	INRAE	147, rue de l'Université - 75338 Paris Cedex 07	Paris	https://www.inrae.fr/en	Prof. Raphael Guatteo of Nantes	raphael.guatteo@inrae.fr	Veterinary science
France	ANIA	ANIA	9 boulevard Malherbert	Paris	https://www.ania.net/	Ariane Voyatzakis	avoyatzakis@ania.net	Food industry
France	ANIA Formations	ANIA Formations	15 rue du Louvre	Paris	https://ania-formations.net/	Philippe Duvocelle	philippe@duvocelle.com	Food industry
France	Parlons agro	Parlons agro	42 Rue de l'Aqueduc	Paris	https://www.parlonsagro.fr/	Lucile Legaigoux	lucile@parlonsagro.fr	Food industry
Portugal	CONFAGRI	CONFAGRI	Rua Projectada à, Aeroporto Internacional de Lisboa, Palácio de Benagazil, R. C, 1700- 008	Lisbon	www.confagri.pt	Catia Rosas	catia.rosas@confagri.pt	Sustainability and Social Economy
Portugal	CONFAGRI	CONFAGRI	Same as above	Lisbon	www.confagri.pt	Cláudio Heitor	claudio.heitor@confagri.pt	Biodiversity
Portugal	CONFAGRI	CONFAGRI	Same as above	Lisbon	www.confagri.pt	Domingos Godinho	domingos.godinho@confagri.pt	Animal welfare
Portugal	CONFAGRI	CONFAGRI	Same as above	Lisbon	www.confagri.pt	Patrícia Carvalho	patricia.carvalho@confagri.pt	Waste



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