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Methodological Guidelines for Challenge based learning

Project: **STIV**- Leveraging artificial intelligence to manage
a Sustainable Transition In Viticulture

Project Reference N°: 2024-1-FR01-Ka220-VET-000245913

3.4: Definition of Methodological Guidelines for Challenge based learning for
participants

Leader: Fondazione Comunitaria di Agrigento e Trapani

Document Identifier	Deliverable
Project	STIV
Version	V 1
Submission date	27.10.2025
Status	Final
Distribution	External project document



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Introduction

Welcome to the STIV – Leveraging artificial intelligence to manage a Sustainable Transition In Viticulture international training experience.

STIV is an Erasmus+ Cooperation Partnership in Vocational Education and Training (VET) that brings together institutions from France, Italy, Spain, and Serbia to address one of the most urgent challenges facing European agriculture: ensuring a **just and sustainable transition in the wine sector**.

Running from November 2024 to November 2026, the project explores how **artificial intelligence, digital innovation, and green skills** can support winegrowers and rural communities in adapting to climate change while maintaining competitiveness and cultural heritage. It also seeks to strengthen VET systems by developing new tools and learning methods that make education more flexible, relevant, and connected to real-world sustainability challenges.

Through this training, participants will experience an innovative learning path based on Challenge-Based Learning (CBL) – a collaborative approach that turns real problems into opportunities for learning and innovation. During the **International Weeks** in Spain and Italy, learners will work in transnational teams, engage with local stakeholders, visit vineyards and research centers, and co-design solutions that can contribute to the digital and ecological transition of viticulture.

CBL is more than an instructional strategy; it is a commitment to learner agency, cross-sector collaboration, and socially impactful innovation. As the STIV project explores how the wine sector can navigate the digital and green transitions in an inclusive and sustainable way, this methodology serves as the engine driving creativity, dialogue, and change.

These operational guidelines will:

- Introduce the philosophical and pedagogical foundations of CBL;
- Explain how CBL is applied within the STIV project, outlining the activities you will take part in during the International Week;
- Help you understand your role as an active learner and collaborator, working with peers and stakeholders to design creative, real-world solutions;
- Support you in preparing for and reflecting on your learning journey, so you can make the most of this international experience and transfer the skills gained to your future studies or professional path.



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Introduction to Challenge-based Learning

Challenge-Based Learning (CBL) is a transformative educational methodology developed initially by Apple's ADE (Apple Distinguished Educators) community and further refined through global practice and academic inquiry. It is grounded in the belief that meaningful learning emerges when learners engage directly with authentic, complex challenges and collaborate to design sustainable solutions. CBL draws on principles from constructivist theories (Piaget, Vygotsky), inquiry-based learning, and problem-based learning (PBL), yet it goes further by explicitly linking learning to social innovation and action.

According to the New Media Consortium (Johnson et al., 2009), CBL facilitates deep engagement and real-world impact by connecting academic content to contemporary issues that matter to students and their communities. Research from the OECD and UNESCO has also supported the effectiveness of experiential, project-based, and challenge-driven approaches in fostering transversal competencies, including creativity, critical thinking, teamwork, and digital citizenship.

CBL operates within a clear framework:

- **Engage:** Learners begin with a big idea and identify a compelling challenge through inquiry and dialogue.
- **Investigate:** Teams research the challenge context, consult with stakeholders, and gather data.
- **Act:** Learners design, prototype, and implement solutions with real-world applications.

This cycle is complemented by iterative reflection, documentation, and dissemination, ensuring that learning is not only active but transformative.

CBL is more than a method; it is a pedagogical philosophy grounded in equity, relevance, and sustainability. It encourages learners to reflect, adapt, and iterate as



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they move through cycles of questioning, researching, ideating, and acting. It champions creativity and resilience while fostering skills aligned with 21st-century priorities: digital literacy, ecological responsibility, civic engagement, and intercultural collaboration.

Key Features of CBL:

- **Real-world relevance:** Challenges are grounded in authentic, locally significant issues that resonate with participants and their communities.
- **Learner agency:** CBL invites participants to take ownership of their learning, cultivating autonomy and initiative.
- **Collaborative inquiry:** Teams work transversally, drawing on diverse knowledge and experiences to enrich the problem-solving process.
- **Innovation-driven action:** Emphasis is placed on tangible, context-sensitive solutions that can be tested, improved, and implemented.
- **Reflective learning:** Critical reflection is woven throughout, enabling learners to analyze not only outcomes but also their processes and roles.

In the context of the STIV project, CBL aligns seamlessly with the ambition to promote a just and inclusive green transition in the viticulture sector. As wine-producing regions confront the dual pressures of climate change and technological disruption, the CBL model offers a fertile ground for innovation, collaboration, and empowerment. Through this approach, learners become catalysts of transformation, exploring how viticulture can evolve sustainably while safeguarding the livelihoods and traditions of rural communities.

Applying CBL within the STIV Project

In the **STIV international training**, *Challenge-Based Learning (CBL)* is the core methodology that guides the entire experience. It transforms learning into a process of exploration, teamwork, and innovation. Rather than receiving ready-made answers, you will take an **active role** in identifying real challenges connected to the digital and green transition in viticulture – and work together to design meaningful solutions.

Your learning journey unfolds in **two main phases**:



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Phase 1: Preparation pre-training

Before the mobility, you will take part in a **local onboarding session**, organized by your sending partner organization.

During this session, you will:

- Get to know the **STIV project**, its goals, and expected learning outcomes;
- Be introduced to **Challenge-Based Learning** and the digital tools that will support your teamwork;
- Meet other participants and receive the **CBL Guidelines for Participants** as preparatory reading.

Phase 2: International Training

During the **International Training Week**, participants from all partner countries will come together to experience *Challenge-Based Learning* in an international and interdisciplinary environment.

Throughout the week, you will alternate between **expert-led sessions, field experiences, and team activities**, combining theoretical learning with practical exploration.

The training program will include:

- **Interactive modules** introducing key topics such as sustainability, digital innovation, social inclusion, and new business models in the wine sector;
- **Field visits and applied demonstrations** that allow you to observe how local producers, researchers, and entrepreneurs are addressing real challenges in viticulture;
- **Workshops and teamwork sessions** where you will define a challenge, investigate its causes, and develop possible solutions using the CBL framework (*Engage - Investigate - Act*);
- **Moments of reflection and dialogue** to share ideas, exchange perspectives, and learn from the diversity of experiences represented in the group;



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- **Final presentations** in which each team will summarize its proposed solution and reflect on the learning process.

The International Week is designed as a **collaborative journey**, where learning takes place through doing, discussing, and creating together. By the end of the week, you will have strengthened your ability to work in international teams, think critically about sustainability and innovation, and apply CBL principles in real-world contexts.

Expanding the Use of CBL Beyond the Project

Your participation in the **STIV international training** is not only a learning experience – it is an invitation to continue growing as an active, reflective, and responsible professional.

The *Challenge-Based Learning (CBL)* approach you have practiced during this project equips you with a way of thinking and working that goes far beyond the classroom. It encourages curiosity, collaboration, and innovation – skills that are increasingly valuable in the context of today's green and digital transitions.

After the international week, we encourage you to **continue applying the CBL mindset** in your studies, your professional life, and your community. The impact of this project depends not only on what happens during the training, but also on how participants like you continue to use and share what they have learned.

How you can keep using CBL

- **In your studies or work:** use the *Engage–Investigate–Act* framework when facing new topics, projects, or problems. Define a challenge, research it, and take concrete action – this method can guide innovation in any field.
- **In your organization or community:** bring the spirit of collaboration to your team or local group. Identify sustainability or digitalization issues around you, and work collectively to find creative, practical solutions.
- **As a multiplier of change:** share your experience with classmates, colleagues, or local youth. You can organize mini workshops, talks, or project ideas based on what you learned during the international training.
- **As part of a growing network:** stay connected with the people you met during STIV – your international teammates, mentors, and facilitators. Collaboration and exchange are at the heart of CBL, and maintaining these links can inspire



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new projects or partnerships in the future.

- **By reflecting and documenting your growth:** keep track of the skills you have strengthened – such as teamwork, communication, critical thinking, problem-solving, and adaptability. These transversal competencies are highly valued in both the professional world and further education.

Why this matters

The wine sector, like many others, is entering a period of profound transformation. Digital tools, data, and artificial intelligence are reshaping how we produce, market, and care for the environment. At the same time, there is a growing need for sustainability, inclusion, and respect for local heritage.

By adopting a *challenge-based* approach, you can become a bridge between tradition and innovation – someone who learns from experience, works collaboratively, and acts for positive change.

Your next steps

- Stay curious – keep learning about sustainable and digital practices in viticulture and beyond.
- Stay engaged – look for new challenges or opportunities to apply what you have learned.
- Stay connected – follow STIV activities, project partners, and networks related to sustainable transition and vocational education.

By continuing to use CBL beyond this training, you are contributing to a community of learners and professionals who believe that education can drive real impact. Each idea, discussion, and experiment you pursue helps build a more sustainable, inclusive, and forward-looking Europe – starting from the vineyards, and growing far beyond them.

Stay Connected

The STIV project continues to grow through the ideas, experiences, and collaboration of all its participants. We invite you to stay in touch, share your progress, and follow the project's journey beyond the international training.



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