TEMPLATE FOR THE GOOD PRACTICE

What is a good practice?

A good practice is not only a practice that is good, but a practice that has been proven to work well and produce good results, and is therefore recommended as a model. It is a successful experience, which has been tested and validated, in the broad sense, which has been repeated and deserves to be shared so that a greater number of people can adopt it.

Please follow the instructions included to fill in the template. You can replace the guiding questions for each element with your description.
Mandatory fields are defined by *

Element	Description
Title*	*Challenger*
Name of the VET Provider	*Šolski center Nova Gorica /School Centre Nova Gorica*
Thematic domain	What is the thematic domain covered by this good practice? More than one domain can be indicated X Innovation X Digital X Green ☐ Inclusion X Entrepreneurial ☐ Career guidance ☐ Lifelong learning X Creating partnerships/skills ecosystems
Introduction*	*What is the context (initial situation) and challenge being addressed? Provide a short description of the problem/challenge being addressed and specify the period during which the practice has been carried out.* The Challenger project was implemented in response to a common challenge in vocational education and training (VET): although VET schools develop strong practical competences, they often have limited structured opportunities, support and methodologies to engage students and teachers in applied research and innovation connected to real industry and societal needs. Before the project, applied research activities in many VET contexts were mainly occasional or project-based, and cooperation with companies and external experts was not always systematic.

The project addressed the need to strengthen **innovation capacity in VET** by introducing more effective ways to involve students and teachers in solving real-life challenges, testing ideas in practice, and developing solutions through experimentation, teamwork and reflection. It also tackled the challenge of building stronger and more sustainable collaboration between VET providers and external stakeholders (companies, mentors and regional partners), while fostering an entrepreneurial mindset and innovation-driven learning culture.

The practice was carried out during the full implementation period of the Challenger project (Erasmus+), in 2023 and 2024, including the development and piloting of activities, collaboration models and learning approaches, as well as the dissemination of results among partner organisations and stakeholders.

Stakeholders and Partners	*Who are the beneficiaries or the target group of the good practice? Who are the users of the good practice? Who are the institutions, partners, implementing agencies, and donors involved in the good practice, and what is the nature of their involvement?*

Beneficiaries / target groups
The main beneficiaries of the Challenger good practice were:
- **VET students**, who gained the opportunity to work on real-life challenges and develop transversal competences such as problem-solving, teamwork, innovation and entrepreneurial thinking.
- **VET teachers and trainers**, who strengthened their capacity to integrate applied research and innovation-based learning into their teaching and to use more learner-centred and challenge-based approaches.
- **Companies and industry stakeholders**, who benefited from collaboration with schools through student-driven ideas, prototypes, testing and fresh perspectives on practical challenges.
- **VET schools and institutions**, which improved their internal capacity for applied research, innovation activities and cooperation with external partners.
- **Local and regional communities**, as many challenges and solutions were aligned with real societal needs (e.g., sustainability, digitalisation, improved services and processes).

Users of the good practice
The direct users of the good practice were primarily:
- **Teachers, mentors and project teams** within VET schools implementing the applied research activities,
- **Student teams** participating in challenges, pilots and innovation projects,
- **External mentors/experts** supporting the process (e.g., companies, researchers, innovation ecosystem actors),
- **School management and development teams**, using the outputs to strengthen institutional strategies for innovation and partnership building.

Institutions / partners / implementing agencies / donors and nature of involvement

The good practice was implemented through an **Erasmus+ partnership** involving partner organisations from different European countries. The key stakeholder groups and their involvement included:

- **Partner VET institutions and organisations** (project consortium): co-developed the methodology, piloted activities, tested learning approaches, and shared results across countries.
- **Companies and external experts/mentors**: provided real-life challenges, mentorship, feedback, technical input, and supported validation of student solutions.
- **Regional ecosystem actors** (e.g., innovation hubs, organisations supporting education and training): contributed to collaboration formats, dissemination, and broader impact.

Impact*	*What has been the impact (positive or negative) of this good practice on the beneficiaries'? Has there been social impact? Has the CoVE impact environmentally, financially, and/or economically the region where it is based (and if applicable, become more resilient), and if yes how? What evidence does show this impact?*

The Challenger good practice had a **mainly positive impact** on the beneficiaries by strengthening the capacity of VET schools to implement **applied research, innovation-based learning and cooperation with external stakeholders**. The practice supported more authentic learning experiences for students and contributed to stronger collaboration between education and the world of work.

Impact on learners (students)

For students, the impact was visible in:

- improved **problem-solving**, teamwork and communication skills,
- increased **innovation and entrepreneurial mindset**, including initiative-taking and responsibility for results,
- stronger ability to work with uncertainty, test ideas, and learn through experimentation,
- increased motivation and engagement due to **real-life challenges and practical outcomes** (e.g., prototypes, solutions, presentations).

Impact on teachers and VET institutions

For teachers and schools, the practice contributed to:

- improved competences and confidence in using **challenge-based learning** and structured applied research processes,
- stronger ability to design learning activities connected to regional needs and company challenges,
- enhanced cross-subject collaboration within schools and increased focus on transversal skills,
- improved institutional readiness to cooperate with external mentors and partners.

Social impact

The project strengthened the connection between VET schools and the local environment by encouraging learners to work on challenges that often respond to real community needs (e.g., sustainability, digitalisation, improved services and

processes). This supported a stronger role of VET in contributing to local development and social relevance.

Environmental, financial and economic impact

Environmental and economic impacts were mainly indirect but relevant:

- Some challenges and solutions developed in the project addressed **sustainability**, circular thinking and responsible innovation, contributing to awareness and practical approaches to greener practices.
- Strengthened cooperation with companies and external stakeholders supported the development of a more **resilient regional skills ecosystem**, potentially improving the quality and relevance of VET outcomes for labour market needs.
- By improving innovation competences, collaboration models and applied research capacity, the project contributed to long-term value creation (better prepared learners, stronger partnerships, and more innovation-oriented education).

Evidence of impact

Evidence supporting this impact included:

- completed student challenge outputs such as **concepts, prototypes, tested solutions and presentations**,
- feedback from students, teachers, and involved mentors/companies during pilot implementation and final events,
- dissemination outcomes and shared project results among partner organisations,
- increased institutional interest and readiness to continue applying innovation-based learning approaches after the project conclusion.

Negative or limiting effects

No significant negative effects were reported. A key limitation observed during implementation was that applied research activities require sufficient time, mentoring capacity and coordination with external partners, which can be challenging during busy school periods. However, the project helped schools build stronger structures to manage these challenges more effectively.

Innovation and Success Factors *	*In what way has the good practice contributed to innovation? What are the conditions (institutional, economic, social, and environmental) that need to be in place for the good practice to be successfully replicated (in a similar context)?* **In what way has the good practice contributed to innovation?** The Challenger good practice contributed to innovation by moving vocational education beyond "standard project work" and introducing a structured approach for embedding **applied research and innovation processes** into VET learning and institutional development. A key innovation of the project was the creation and piloting of a **Next-Generation Community Makerspace concept**, designed specifically to support applied research within VET curricula and connect students to real stakeholders (mentors, industry experts and the community). Innovation was achieved through several dimensions: **Pedagogical innovation (learning approach):** Challenger supported challenge-based and problem-based learning and introduced a clear **Innovation Journey** for students (learning phases, guidance, expected outputs).

- **Organisational innovation (how schools operate):** Partner schools tested new internal roles, processes, and learning environments enabling systematic applied research, rather than isolated "one-off" activities. The **User Journeys for teachers, tutors and mentors** helped clarify responsibilities and support implementation.
- **Strategic/system innovation:** Challenger went beyond classroom methodology and tackled obstacles at the system level. The report **"Pathway to systemic solutions for applied research in VET"** collected stakeholder input (students, teachers, school leadership, companies, policymakers) and provided recommendations and an action plan to enable implementation at regional/national levels.
- **Transferable tools and frameworks:** The project produced concrete replication tools, such as the **Next-Generation Makerspace Framework**, a **Business Plan Template**, and structured dissemination materials (including podcasts).
- **Capacity-building innovation through modular learning:** Challenger also developed **self-guided online modules for** learners **and** teachers, strengthening competences in innovation processes, applied research and mentoring/facilitation roles. These training resources increase sustainability and make the practice easier to replicate in different VET contexts.

In this way, Challenger supported innovation not only through new student outcomes and prototypes, but also through improved institutional capacity and long-term implementation models.

What conditions need to be in place to replicate it successfully?

To replicate the Challenger good practice in a similar context, the following conditions should be present:

Institutional conditions

- Commitment from school leadership to integrate applied research and innovation-based learning into the VET offer.
- Teachers/trainers with time and support to act as facilitators (not only "subject instructors"), supported by guidance such as the **teacher/mentor user journeys**.
- Access to an innovation environment (a lab / makerspace / workshop). The Challenger **Next-Generation Makerspace Framework** provides a replicable structure for this.
- A clear student process, such as the **Innovation Journey Map**, to guide learners step-by-step and keep results measurable.
- Access to training resources (e.g., Challenger's **teacher and learner modules**) to ensure consistent competence development and implementation quality.

Economic conditions

- Basic funding for materials, prototyping, maintenance of equipment and coordination (especially if a makerspace model is used).
- Capacity to support mentorship and external involvement (company experts, tutors, innovation ecosystem actors).
- Tools that support sustainability and long-term planning, such as the **Business Plan Template** for the makerspace/innovation model.

Social conditions

- Strong partnerships with companies and external stakeholders willing to provide challenges, feedback and mentoring.
- Trust-based collaboration culture between school, learners and external mentors.
- Learners' motivation supported through real-life, meaningful challenges (community relevance), and visible outcomes.

Environmental conditions

- Alignment of challenges with regional priorities such as sustainability, circular thinking and responsible innovation.
- A culture of safe experimentation (testing ideas, learning from failure), which is essential for applied research.

System-level enabling conditions

- Supportive policy environment and openness to recognising applied research structures within VET.
- Stakeholder involvement (schools, companies, policymakers) is similar to the approach used in the **systemic pathways report**, which helps reduce implementation barriers.

Constraints*	*What are the challenges encountered in applying the good practice? How have they been addressed?* During the implementation of the Challenger good practice, several challenges were encountered, mainly linked to time, capacity, coordination, and long-term sustainability of applied research activities in a VET environment. These constraints were addressed through structured planning, guidance materials, capacity-building, and stronger cooperation with external stakeholders. **Main challenges encountered** **Limited time within existing curricula and school schedules:** Applied research and challenge-based learning require longer time blocks, coordination across subjects, and space for experimentation, which can be difficult during regular teaching periods. **Teacher workload and the need for facilitation competences:** Teachers often needed additional support to take on roles as facilitators, mentors and role models, beyond traditional teaching tasks. **Ensuring consistent involvement of external stakeholders (industry experts, mentors, entrepreneurs):** Collaboration with companies and experts depends on their availability and priorities, which can vary during the year. **Different readiness levels across partners and schools:** Partner institutions started from different levels of maturity in applied research, innovation culture, makerspace readiness, and cooperation structures. **Resource limitations for prototyping and testing:** Even when equipment existed, piloting often required additional materials, technical support, coordination time and mentoring capacity. **Sustainability after project end:** Ensuring continuation beyond the funded project period required long-term planning and integration into school strategies and ecosystem partnerships. **How these challenges were addressed**

- **Clear structures and guidance for implementation were developed and used**, supporting schools in planning innovation activities more systematically. This includes the development of a **Next-Generation community makerspace framework**, which helps institutions define the learning environment, roles and implementation approach.
- **Teacher capacity-building and role clarification were strengthened** through the project's structured learning and training approach. Challenger developed **modularised courses for teachers/role models**, helping them build competencies in applied research, innovation management, entrepreneurial mindset and mentoring.
- **Workload and coordination challenges were reduced** by distributing responsibilities across multiple roles (teachers, tutors, mentors, external experts), and by using defined learning pathways and collaboration models (e.g., clear expectations for mentoring and learner support).
- **Partner cooperation and stakeholder engagement were supported through joint piloting and feedback loops**, ensuring solutions were realistic, aligned with regional needs and validated in practice.
- **Differences in readiness across partners were addressed through piloting and gradual scaling**, enabling organisations to start with achievable activities and progressively strengthen applied research capacity.
- **Sustainability planning was supported through strategic and systemic work**, including the development of a **systemic pathway for applied research in VET**, based on stakeholder input (students, teachers, companies, policymakers, regional authorities). This helped identify barriers and propose recommendations for long-term integration and replication.

Lessons learned *	*What are the key messages and lessons learned from the good practice experience?* The Challenger good practice generated several key lessons on how to successfully introduce **applied research and innovation** into vocational education and training (VET). Overall, the project showed that innovation in VET becomes sustainable only when schools combine **practical learning challenges**, **clear implementation frameworks**, and **strong partnerships** with external stakeholders. **Key messages and lessons learned** • **Applied research in VET needs a structured pathway, not "one-off projects".** Challenger demonstrated that challenge-based activities are most effective when schools work with a clear model and step-by-step process. Tools such as the **Next-Generation community makerspace framework** and the **Innovation Journey** helped translate innovation into a practical and repeatable approach for schools. • **Innovation culture depends heavily on teachers' roles and mindset.** One of the strongest lessons was that teachers are not only instructors, but also **role models, mentors and facilitators** who support creativity, experimentation and problem-solving. The project therefore focused on defining and strengthening these roles through role model concepts and training.

- **Capacity-building must be continuous and supported by flexible learning resources.**
  The project confirmed that teachers and learners need accessible learning formats to build innovation competencies over time. The **modularised self-guided courses** supported schools in gradually upskilling staff and learners, creating a stronger foundation for replication.
- **Partnerships with companies and ecosystem actors are essential for relevance and real impact.**
  Challenger showed that applied research becomes meaningful when students work on real challenges and receive feedback from **industry experts, entrepreneurs and mentors**. This collaboration increases authenticity, motivation and quality of outcomes while strengthening local skills ecosystems.
- **Schools need tools for sustainability and long-term implementation.**
  The project highlighted that innovation practices require planning beyond the project period. The use of resources such as a makerspace business model and systemic recommendations supported partners in thinking about long-term continuation, ownership and feasibility.
- **Many barriers are systemic and require broader support beyond the school level.**
  A major lesson was that VET schools often face institutional barriers (limited time, funding, legislation, and recognition of applied research). Challenger, therefore, included the creation of a **systemic pathway to applied research in VET**, developed through stakeholder input, showing that long-term success requires alignment between schools, policymakers, and social partners

Replicability and/or up-scaling	*What are the possibilities of extending the good practice more widely? What are the conditions that should be met/respected to ensure that the good practice is replicated, but adapted to the new context?* *The aim is to go further than the section "Innovations / critical success factors" in specifying the requirements for replication of the practice on a larger scale (national, regional, international).* The Challenger good practice has strong potential for replication and up-scaling because it was designed as a **transferable model** for embedding applied research into VET through frameworks, learning pathways, and ready-to-use learning resources. The project created practical tools such as the **Next-Generation community makerspace framework**, an **Innovation Journey**, and **modularised self-guided courses** for learners and teachers, making it feasible to extend implementation beyond the original partnership. **Possibilities for extending the practice more widely** **Regional / national scale** The approach can be adopted by additional VET schools through establishing or upgrading innovation environments (makerspaces/labs/workshops) and using Challenger's structured model for applied research and challenge-based learning.

- It can support regional skills strategies by strengthening cooperation between VET providers and local companies, entrepreneurs, research centres and public stakeholders.

International / EU scale
- Challenger already demonstrated transnational transferability through partner cooperation across **five European countries** (Austria, Denmark, Germany, Slovenia, Sweden).
- The practice can be extended through European networks (e.g., CoVEs, VET innovation networks), using the same framework and training resources to ensure common quality standards while allowing local adaptation.

Conditions to ensure replication at a larger scale (with adaptation to context)

To scale the practice effectively, replication should follow the **core principles** of Challenger while allowing flexibility in delivery. The following requirements are critical:

1) Keep the core model, adapt the implementation

Replication should preserve Challenger's main structure:
- **Applied research / real-life challenges as the learning driver**
- **Innovation Journey** guiding learners through clear stages (from identifying problems to testing and presenting solutions)
- **Role model / mentor support** (teachers and external experts supporting the process)
  Adaptation is recommended in the *format* (project weeks, modules, extracurricular activities, interdisciplinary blocks), depending on curriculum rules and school context.

2) Establish an "enabling environment" (makerspace logic, not necessarily expensive equipment)

Up-scaling requires an innovation environment where experimentation can happen. Challenger's model is built around **Next-Generation Makerspaces**, but replication can be adapted to the local context:
- existing school labs/workshops can be transformed into applied research spaces,
- equipment levels can vary, but the key is *access, safety, mentoring, and a process for experimentation*.

3) Invest in teacher capacity-building and recognition

Scaling depends on teachers' ability to act as facilitators and innovation role models. Challenger addressed this through **modularised courses for teachers/role models**, covering innovation management, entrepreneurial skills, collaboration, and practical implementation methods.

To replicate at scale, systems should ensure:
- sufficient time allocation and recognition of workload,
- continuous training opportunities,
- internal support teams (not single individuals).

4) Build and maintain an active ecosystem of external stakeholders

Large-scale replication requires stable cooperation structures with:
- companies/employers,
- entrepreneurs/startups,
- research and innovation centres,

- local/regional authorities and policymakers.
Stakeholders should be engaged not only for "guest talks", but as providers of real challenges, feedback, mentorship and validation of solutions.

5) Support sustainability with strategic and financial planning

Up-scaling is successful when applied research is embedded into school strategies and supported with planning beyond single funding cycles. Challenger explicitly included outputs supporting sustainability (e.g., business planning logic for the makerspace model).

At a larger scale, this requires:

- long-term ownership at leadership level,
- basic operational funding for materials and coordination,
- link to regional development priorities (digital/green/innovation).

6) Combine school-level replication with system-level support

Challenger highlighted that some barriers are structural (curriculum limits, recognition of applied research, funding models). The project therefore produced a **pathway to systemic solutions for applied research in VET**, based on stakeholder perspectives, which is highly relevant when scaling nationally or regionally.

For larger-scale roll-out, alignment is needed between:

- schools and their governance structures,
- ministries/authorities,
- social partners and ecosystem organisations.

Contact details	*What is the address of the people or the project to contact if more information on the good practice are needed?*
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URL of the practice	*Can the good practice be found on the Internet?*
	https://challengerproject.eu/
Related resources that have been developed	*What training manuals, guidelines, technical fact sheets, posters, pictures, video and audio documents, and/or Web sites have been created and developed as a result of identifying the good practice? How can them be accessed?*
	https://challengerproject.eu/resources/