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1st DESCI TESTING PHASE REPORT

This document has the goal to report the main aspects emerged during the 1st testing phase (academic course 2016-2017). Each school must to fill in a report for each alternating training scenario realized. Your information will be valuable both for the reporting to the National Agency and to better know the experiences realized in each school.

Overall section

Indicate the course of studies and the curricula involved in the alternating training experience (School itinerary, grades and age of student involved in the alternating training project)

- Students in their 2^o year of Intermediate VET Electrical and Automatic Installations
- Students in their 2^o year of Higher VET Electrotechnical and Automated Systems

Students between 18 and 30

Indicate the partner/s formally involved in the alternating training experience (enterprises, social actors etc)

- Tecuni (Vinci Group): USER, member of the Living Lab.
- Hetel (Association of non profit VET Schools of the Basque Country). Stakeholder.
- Tknika (Center for Research and applied innovation in VET of the Basque Country, Basque Regional Government) Stakeholder.
- VET Schools of the network of the Church (Elizbarrutiko Ikastetxeak) Stakeholder.

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Describe the scenario and target competences

During the whole school year 2016-2017 students develop a project in order to answer a specific real problem of the company Tecuni.

The Scenario consisted in the resolution of a technical problem: the lack of training of workers in Tecuni company regarding potential failures of the grid and the way to detect and solve them. The company Tecuni proposed to the students the development of a technical solution in some kind of device for an "Electricity grid failure simulator trainer", an electric installation able to provoke electrical failures in a public grid in order to be used as a trainer in different situations for the workers.

The best project is selected and 5 students develop the project in real settings at Tecuni during 3 month traineeship.

The situation of the scenario at the time of this Focus Group is that the 5 students are developing the project at the company (last days of their traineeships).

Describe the kind of Living Lab activated (dates, functions, objectives and targets, results?)

It lasted an academic year (from September 2016 to June 2017)

The Living Lab in Somorrostro activates the project and is composed of 2 teachers, one headteacher, the External Relations Manager, the EU project manager and 2 representatives of an industrial company in the electricity management sector.

The Living Lab has presented a real problem that needs to be solved in order to improve the services provided to the municipalities: the need to anticipate failures in the electricity grid of a city/town, through a simulator or an early failure detection system.

- Students in their 2^o year of Intermediate VET Electrical and Automatic Installations
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The living lab considered that putting together students from 2 different educational levels, will provide an added value to the outcomes and will enrich the acquisition of knowledge and skills provided that Intermediate VET students are more on the "do" and execution side of the work, and Higher VET students are in the design and theoretical part of the work.

Objectives:

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- Divergent thinking
- Initiative
- Leadership
- Responsibility
- Autonomous learning
- Research skills
- Ability to get questions by examining data
- Learn to understand
- Team working
- Conflict resolution
- Communication
- Team awareness

Plus the technical skills included in the rubric matrix that are those mandatory in order to accomplish the course.

Describe the connections with the local community

This project was carried out hand to hand with TECUNI, which is one of the most important companies in the Basque Country. As part of this collaboration, TECUNI will be able to train their own workers thanks to the training material developed by our students. Besides, Somorrostro has also developed a demo similar to the one the students developed in TECUNI in order to train future generations.

Apart from this, TECUNI, as part of the VINCI multinational enterprise, has presented the project to the rest of the members of the group, having a very good acceptance, and they are now thinking in the possibility of commercializing the prototype our students have developed.

Indicate the participatory practices activated

- Participation of 28 students, with the same specialty but from two different levels, during 5 months and a half
- During 3 months 5 students carried out the project assembling all the equipment in TECUNI

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Design Phase

Describe the activities developed in the Design phase (stakeholders involved, number of meetings, positive and critical aspects etc)

Phases	THE IDEA-PROJECT CONCEPT DESIGN		ORGANISATION-DEFINITION OF THE PERSONALISED PROJECT AND DELIVERABLE
Modules	CHALLENGE ELUCIDATION-DEFINITION OF PARAMETERS	THE IDEA-CONCEPT DESIGN	THE IDEA-SELECTION AND PLANNING
Objectives	Definition of parameters meaning of all questions that will allow classifying the challenge in different knowledge areas and activating the research and generating new knowledge.	To generate different alternatives to the challenge once all questions have been answered	The group will decide which of the alternative ideas proposed in the previous module is the most adequate and will develop the project based on a Gantt Diagram.
Activities	<ol style="list-style-type: none"> 1. Classification of the challenge into different areas of knowledge. 2. Definition of the information needed to activate the research. 3. Clarify the tasks to be done by the students in order to provide a solution to the challenge. 	<p>From the information obtained, after the questions listed below, the group chooses the alternative that will develop during the course of the challenge.</p> <ul style="list-style-type: none"> - Is there more than one alternative or solution to the challenge, or to any of the subtasks? - Can you do the tasks in more than one way? 	<ol style="list-style-type: none"> 1. Presentation of each group of the alternatives chosen and envisaged deliverable. 2. Selection criteria will be established in order to evaluate its viability and excellence aimed, costs, impact on the client, image, innovation potential, execution time, costs, available resources and evaluation criteria derived from the official learning programs. 3. Elucidation of main

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		<ul style="list-style-type: none"> - Do you chose one and exclude the other one? - Do you aim to integrate them in the challenge? - Do you include them in the presentation and justify the reason why you opted for one of them? That would be smart. 	<p>solutions, pros and cons of each proposal among all groups.</p> <p>4. Consultation of the main solutions with the Living Lab.</p> <p>5. Planning the idea: elaboration of a Gantt Diagram in order to establish the work plan to produce the deliverable. This Gantt will certainly be adjusted/modified in accordance with the evolution of the work and tasks.</p>
Duration	30 minutes	20 minutes	75 minutes

Who defines the alternating training program of the student? If possible, give further information about the role of each part in defining the alternating training program of each student

Both technicians of the company and the teachers. The technicians present different ideas of what they would like to develop and the teacher adequate these challenges to the learning results and the different necessities of the education curriculum.

Implementation phase

Please, describe the activities developed in the Implementation phase (specify how much time in the school and how much time in the enterprise/ describe the role of teachers and enterprises in the development of students' alternating training)

Phases	REALIZATION OF THE PROJECT AND DELIVERABLES
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Modules	EXECUTION OF THE DELIVERABLE	RESULTS PRESENTATION
Objectives	Each group develops the planned activities through experimentation and practice.	Presentation of the final outcome or deliverable at individual and group level and its process, decisions taken, etc.
Activities	1. Development of activities 2. Monitoring of activities 3. Evaluation of activities	1. Individual presentation in the classroom in front of Teachers Living Lab/tutor 2. Group presentation in front of the Teachers Living lab and or Living Lab
Duration	Depending on the deliverable	Depending on the number of groups

Evaluation phase

Please, describe activities developed in the Evaluation phase and specify who is responsible for student evaluation during alternating training?

A. The teachers

- B. School entities (please specify): _____
- C. The government
- D. The enterprise
- E. Both school entities and enterprises
- F. A mixed system that also includes other stakeholders

The evaluation is carried out both by the enterprise and the teachers, however, t, as the Basque Governments demands, the last responsible of evaluating the job the students have done is the teacher.

Evaluation Framework

Results of the Focus groups of the Evaluation Framework (to be filled in for each focus group realized)

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Please describe, in a synthetic way, background and issues addressed during the Focus Groups and include the input provided by the participants.

Date: 24/05/2017

Venue: TECUNI, Parque Empresarial Abra Industrial, s/n, 48530 Ortuella, Vizcaya.

Participants:

NAME OF TUTORS /TEACHERS /MODERATORS	ORGANISATION	EMAIL
Tamara Yagüe (General Director)	TECUNI	Tamara.yague@tecuni.com
Alberto Campo (Public Lightning Province of Biscay)	TECUNI	Alberto.campo@tecuni.com
Miguel Tarela (Public Lightning Metropolitan Area of Bilbao)	TECUNI	Miguel.tarela@tecuni.com
Matías de Lecea	TECUNI	
Álvaro Guerra (Technician)	TECUNI	Alvaro.guerra@tecuni.com
Sebastián Gormedino (Technician)	TECUNI	Sebastian.gormedino@tecuni.com
TEACHERS		
Aitor Fernández	SOMORROSTRO	Aitor.fernandez@somorrostro.com
Pedro Sousa	SOMORROSTRO	Pedro.sousa@somorrostro.com
PROJECT MANAGER-MODERATOR		
Elia Urresola	SOMORROSTRO	Elia.urresola@somorrostro.com

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OUTCOMES OF THE FOCUS GROUP

PART 1- WORKING TABLES

1. Experience in general

2.

Tamara Yagüe as General Director of Tecuni company highlighted the success of this experience with Somorrostro. It was the first time that the company cooperated in a specific Project with a Vocational Education and Training School.

She specifically emphasized the following strengths:

- The contact with VET school and with teachers is strength as they bring new ways of approaching problems.
- Hosting and cooperating with students and teachers provides the necessary time to stop in the workers routine and be aware of the learning process and of the professional development of the students and of themselves. To teach is a unique way of mastering something.
- Tecuni recently constituted an Innovation Group within the company, a sort of informal group in order to launch new ideas. Before the cooperation with Somorrostro, the group was stuck and the Desci experience helped to materialized the project technically and on time.
- The project has helped to stimulate the tutors as this experience has contribute to their professional development because of the responsibility to mentor and tutor youngsters, and also at technical level because they have had the opportunity to know different ways of thinking.
- As a whole, the benefits have been:
 - o Experience: new experience, new ways of learning.
 - o Skills: new skills.
 - o Innovation: innovative outcomes (the product) with exploitation potential.
 - o

Pedro Sousa (teacher at Somorrostro) took the floor and pointed out the need for teachers to get out of the daily routine of classes and get to know the reality of companies, their objectives, technological problems, innovation processes. This helps teachers to learn and contribute to their long life learning. He points out the positive impact of working with concrete deadlines which has been very useful to learn on the basis of real situations. The DESCi experience has constituted a really positive experience in this sense.

3. Skills

- **Team work and roles:** Participants point out the acquisition of sound team work skills. In addition they mention the role that each student takes within the group: the leader, the follower, the worker that follows the rules, the silent worker that hides behind the group. During the period at school, teachers have tried to take those silent workers to show up in order to contribute to their empowerment.

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- **Creativity and innovation:** all participants agree that Desci scenario has contributed to develop skills such as creative thinking and innovation thinking. Tecuni (the company) was really surprised of some of the ideas and solutions proposed by students as the challenge which they were facing to was a complete new scenario for the company itself.
- **Communication Skills:** through the scenario, students have had to present their ideas and projects at several stages which have made them face a new situation which is public presentations, oral communication, assertiveness when having to defend their ideas in the group, etc.
- **Technical skills:** tutors agreed that the acquisition of technical skills is clear. Students have learned the whole process and installations of the electrical supply in cities (Tecuni manages all the electrical network of the city of Bilbao and most towns in Biscay).
- **Business skills/Financial skills:** this is one of the skills in which the company has identified a great learning and advances. When developing the theoretical project at school with teachers they prepared a budget for the project development but at the company when building in real settings the “Electricity grid failure simulator trainer”, they learned to make a real budget based on market prices. They had to contact suppliers, look for the best value for money, develop communication skills. In addition, they learned to monitor costs and make adjustments as they find out that costs were increasing rapidly throughout the project. As Matías de Lecea from Tecuni said, “students have been economists in some way”.

4. Strengths

- Innovative approach bringing together students-teachers-company.
- Multidisciplinary approach that contributes to creative thinking.
- The scenario provides an added value to Vocational Education and Training.
- For the company, the possibility to work with VET schools and students leverages the company own innovation potential, making possible to develop new projects.
- In words of Tamara Yagüe (General Director in Tecuni), the experience “is a round project in which the company develops its innovation strategy, the students learn and the teachers and tutors’ professional development and long life learning grows”.
- Teachers Pedro Sousa informed that even parents contacted them in order to inform about a change of behavior in their children and their increased motivation.
- Tutors Sebastián and Álvaro pointed out the good personal connection with students and their motivation. Also the need to welcome students in the companies as they represent the future and tutors must spend/dedicate time teaching them. Álvaro mentioned the need to trust new people (students) with high qualifications, as they bring problems with already made solutions. In the personal side they pointed out the gratification and proudness of having contributed to the learning process of students.

5. Weaknesses and Suggestions

- Tecuni participants pointed out that as first experience they couldn’t tell any weakness, however

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they indicated aspects that could be improved for the next Desci experience.

- Transversal skills such as communication should be more valued and worked within school.
- Also the economic and cost issue should be more developed throughout the experience as it is key for the project development within private companies.
- The presentation of projects could be improved in some innovative ways.
- Teachers highlighted that some of the participant students were in “school mode” during the experience and that it took some time to involve them in the project.
- Also, teachers point out that it would have been better to have more hours dedicated to meetings within each team and a better initial planning. Also they mentioned the lack of business mentality.
- Some teachers of other subjects complained that at some points the performance of some students went down, because they were too centered in their projects.
- All participants highlighted the readiness of the Living Lab (Somorostro-Tecuni-Students) for the next challenge and are thinking on new ideas for next school year 2017-2018.
- As final recommendation for the future, Tamara Yagüe suggested that the students having participated in the Desci experience should encourage and motivate 1st year students to participate and drive innovative project within school.

PART 2- FOCUS GROUP-EVALUATION FRAMEWORK

Q1-6. QUESTIONS ABOUT THE DESCİ METHODOLOGY IN GENERAL.

Q1-2-3-4-5-6- Participants believe the DESCİ approach suits the resolution of problems in real contexts within VET programmes but is suitable also for any level of education. It contributes to develop creativity and innovation skills facing real problems and finding solutions to a challenge proposed similar to a Problem Based Learning Methodology. This approach suits the needs of the labour market and is in line with the educational strategy of the Basque and Spanish Governments.

Q7-10. QUESTIONS ABOUT THE TOOLKIT FOR LEARNERS, TEACHERS AND TUTORS.

Q7-9- The methodological guidelines and operational tools are considered to be quite complex for the 3 target groups –teachers, tutors and students-. However they can be used in a modular way, but this should require some adaptation. Teachers and tutors remind the need to reduce paper work and suggest the reduction of literature content. They think it is better to have a short training before and then only use the Scenario template and the evaluation rubrics.

Q8- The toolkit by themselves no, the implementation of the scenarios in the schools yes, they strengthen the skills of students clearly, both technical and transversal skills.

Q10- The timeline should be adapted to the reality of each school.

Q11-14. QUESTIONS ABOUT THE EVALUATION TOOLKIT.

Q11- 14- Although we have used our own templates, which fit perfectly the evaluation toolkit because it is

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based on rubrics, we must say that yes, the evaluation toolkit allows the evaluation of the skills acquired. As for the previous toolkits, the evaluation processes must be adapted to each school's reality and requirements, as most education systems in Europe are quite rigid.

Suggestions for the Toolkits improvement

Please indicate, for each toolkit (teacher toolkit, student toolkit and evaluation toolkit) the critical issues emerged during the testing phase and give a specific input to overcoming it.

