

DESCI



Developing and Evaluating Skills for Creativity and Innovation

DESCI Alternating Training – How to EVALUATION TOOLKIT



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INTRODUCTION

The activities of alternating training belong to the curricular sphere of the student; they combine the theory learnt in the classroom with the practice experienced in work organisations, finalising the learning processes. In alternating training, a variety of work organisations may and should interact with schools, including companies, research institutions, NGOs, cultural bodies and associations (local stakeholders).

Desci's alternating training is highly structured and modular at the same time. This will allow a use that takes into account the different needs expressed by schools and according to local contexts: it is divided into 4 CHAPTERS/ SECTIONS, corresponding to the macro-phases of the project:

- **KNOWING:** In this first section it is outlined the main meaning of the ALTERNATING TRAINING methodology, its regulatory developments and an 'annotated map' of the main actors.
- **DESIGNING:** In this section the alternating training paths are designed and planned, introducing the theme of skills and describing the training project. A major focus is dedicated to the living lab methodology.
- **IMPLEMENTING:** In this section the main steps of the working process to be adopted and aspects to watch out in the context of training are described. Samples of different DESCi implementation scenarios, developed for the 3 DESCi school partners, can be found in this section. Other scenarios can be developed by the schools during and after the project. The DESCi scenarios and implementing scenarios (with the alternating training plan) are collected in the DESCi website as separate documents.
- **EVALUATING:** In this last section of Desci phases, the alternating training factors of success are identified, by supporting the assessment and verification of the results obtained.



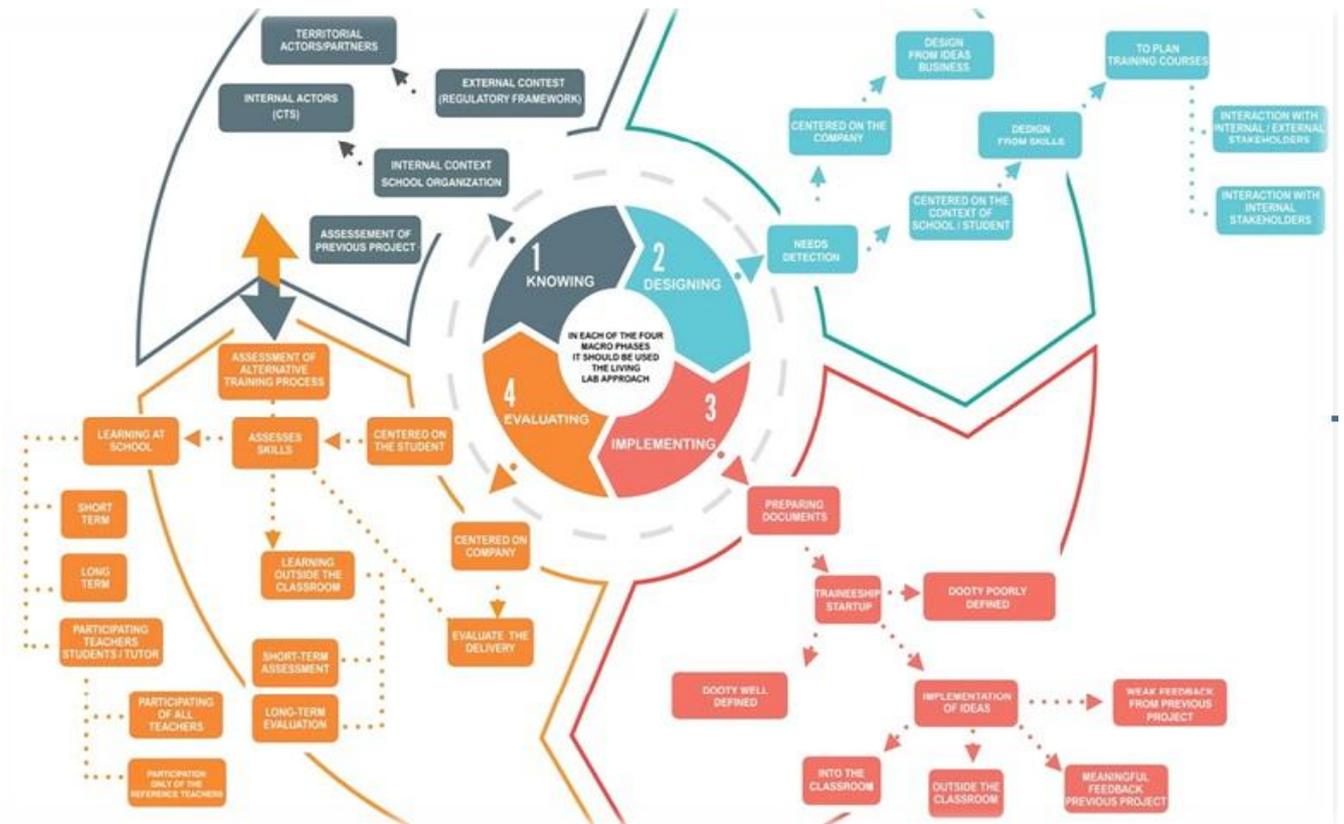


Figure 1: Desci Conceptual Map: the four phases and their processes.

In particular the activity of **designing** and **planning** (Designing phase), on the experience of "alternating training", must be contextualised and shared, and the learning activities must be integrated according to the stakeholders of different working areas in which the student is introduced.

To this aim the phase of designing and planning must:

- provide a process of implementation, monitoring and evaluation based on cooperation and sharing of contents and tools between the educational system and the world of work;
- be connected to the repertoires of production processes and to the system of skills;
- be customised according to the different types of institutions/companies and different organisational arrangements;
- define a customised process aimed at effectively integrate the student's curriculum with alternating training tools and its specify characteristics;
- Establish a system of shared and integrated assessment into the final certification of learning.

The developed evaluation system will refer to the **European credit system for vocational education and training (ECVET)**¹, using innovative tools for the assessment of learning outcomes.

¹The European Credit System for Vocational Education and Training (ECVET)(2006), Recommendation 2006/962/EC on key competences for lifelong learning. European Union Law.

This evaluation toolkit will integrate the evaluation of the student's *performances* and learning process (endogenous evaluation) and the evaluation focused on the delivery generated during the working process (exogenous evaluation). The aim of DESCi tools and proposals is to motivate and guide students and to experiment and implement their skills in a real workplace, actively involving several subjects (the student, the school and the work organisations). Therefore, it becomes imperative that all the parties involved are able to collaborate and to share objectives. Indeed, the alternating training is based, on the interaction of three different key factors:

- the school's educational choices;
- the professional needs of research institutions, companies and associations;
- the individual learning needs of students.

Through the adoption of a Living Lab approach, DESCi alternating training promoted and opened school systems to a shared and participatory methodology to build networks with communities and institutions (above all at local level).

The local work and institutional world may build relationships with schools and students may benefit from the interaction with a number of work organisations. In this Evaluation Toolkit, we particularly take into consideration "companies" and "research institutions" as two patterns of stakeholders that may be involved in the school alternating training processes. Other kinds of institutions and social actors that may be involved in the alternating training with schools can personalise the tools produced in this Evaluation Toolkit and adapt them to their context.

Meaning of Evaluation for School, Institutions, and Students

SCHOOL: The evaluation of the Living Lab approach to alternating training allows to check how much do students increase learning outcomes, improve attitudes, interact in constructive relationships with peers and with teachers and increase their own motivation. It also allows check if synergies occurred with the territory, understanding the links between schools experience and context opportunities.

INSTITUTIONS: The evaluation of the Living Lab approach to alternating training allows checking if the investment made in terms of time and attention devoted to a school student can generate a return in the medium and long term, in term of:

- Development of new skills and competences in young people.
- Strengthening the institution's connection to the surrounding environment.

STUDENT: The evaluation of the Living Lab approach to alternating training allows checking if the alternating training can be an important tool to learn how to connect and integrate the theoretical approach with the experience, gaining autonomy, creativity, interpersonal skills, and growing as a person and as a professional. Above all, the project wants to improve the student's essential skills, presented by the ECVET² report: technical and professional, transversal soft, citizenship, and creativity and innovation.

² The European Credit System for Vocational Education and Training (ECVET)(2006), Recommendation 2006/962/EC on key competences for lifelong learning. European Union Law.

Effective evaluation must, therefore, take into account these variables and be appropriate to the different subjects involved. The entire path of evaluation is a process developed on the field, by monitoring the activities of all actors of alternating training, in order to get timely feedback on any difficulty encountered, and verify compliance with the objectives.

The Living Lab approach in DESCI

Inside the DESCI alternating training system, it has been adopted the Living Lab approach: the school activates a co-working space where the students develop innovative projects/deliverables of social utility (e.g.), outcomes which are innovative and socially, ecologically and economically sustainable), trained by research institutions and social, cultural, and companies world (fig. 2).

The living lab methodology is used to improve the alternating trainings, through the sharing of ideas and collaboration between students and entities like: institutions, research centers and enterprises. The school becomes a meeting point among institutions, research centers and enterprises.

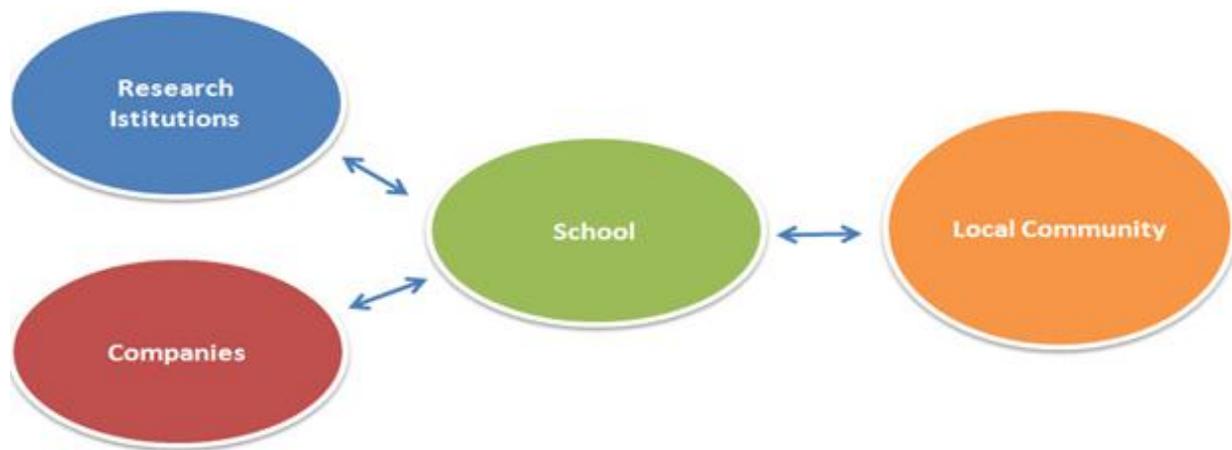


Figure 2: *The school as incubator of innovation and creativity for reference communities.*

The school has the opportunity to create an innovation-lab to promote/develop innovation for the reference community (e.g., local communities), with the support of companies and research institutions.

The goal is to promote the active involvement of the end users in order to detect their needs, designing and evaluating innovations (social, technological etc.) that will have a medium- and long- term impact.

So, the school becomes a "Living Lab": it opens its doors to the community and becomes a school-pole for the alternating training, connected at the European level.

Why Living Lab

Thanks to the living lab approach and getting an "incubator" of innovation and creativity, the school should integrate the training path and make students aware of the importance of all kinds of innovation in everyday life.

The living lab in DESCI is an opportunity for:

- Schools: the living lab enables schools to open up to the problems of their communities offering innovative solutions in response to their needs and aims;
- Teachers: the living lab enables teachers to enhance not only "formal", but also "non-formal" and "informal" learning methods of their students;
- Students: the living lab enables students to become active and responsible actors of their community;
- Companies: the living lab enables enterprises to come into direct contact with the innovative potential of the younger digital-born generation;
- Research institutions: the living lab enables researchers to have a direct contact with the innovative potential of the younger generation, giving students the opportunity to experience the research environment as well as making them aware of the importance of research for the growth of society.

The school can be seen as the engine and driving component that allows services and resources, and cooperates in reading the cultural and educational needs of the community, working together to co-construction of culture and social capital networks.

School & Living Lab

The DESCI Living Labs are open, collaborative learning environments, innovation arenas, and places of social interchange, empowering communities in their learning and progress towards a more sustainable lifestyle. In the process of activation and implementation of the DESCI living lab at school, we can identify the two following living labs:

- ❖ *Teacher's Living Lab (TLL): through which teachers will plan, realise and evaluate the implementation scenarios of the alternating training for their school;*
- ❖ *Student's Living Lab (SLL): into the alternating training the students should activate a living lab for developing innovative industrial delivery, under the tutoring of the teachers, enterprises and researchers.*

The Teacher's Living Lab is a project that focuses on the permanent physical place (the school) where the school invites stakeholders (citizens, researchers, companies, etc.) to create an innovation hub useful for the territory/ local communities: one school, one Teacher's Living Lab.

The Student's Living Lab integrates the traditional school experience with an innovation co-working project between schools and the environmental context. The living lab is a continuous path process: for a group or a class of students it closes when they complete their project: one school, more students through the Living Labs.

1. EVALUATION IN DESCI: AIM AND TOPIC

The schools will be in charge of implementing the evaluation process and data collection in each of the evaluation phases involving the three profiles (students, teachers and tutors) according to:

EX ANTE (EA):

AIM - Assessing the past experiences and the expectations of all alternating training actors.

TOOLS - 4 questionnaires: for students, for families, for external tutors (research institutions and companies).

WHEN - At the beginning of DESCI project.

ONGOING (O):

AIM - Assessing the development of the alternating training and the improvement of students' competences during the alternating training.

TOOLS - Questionnaires and rubric: the first one for students and the second for teachers.

WHEN - In the middle of the testing phase.

EX POST (EP):

AIM - Assessing the alternating training process and the improvement of students' competences/ skills.

TOOLS - The same questionnaires used in the EA complemented with new items.

WHEN - At the end of the testing phase.

The questionnaires that compose this toolkit (ex ante questionnaire for students, companies/ research institutions and families; ongoing questionnaire for students; ex post questionnaire for teachers, students, families, companies and research institutions) are not rigid and fixed, but some questions/ items may be modified through time. The questionnaires modularity includes different kinds of questions to catch much information than possible.

Examples:

- some questions are compulsory because represent the essential questions for the evaluation and the analysis of skills in DESCI approach (eg. ex ante questionnaire for external tutors: first part)
- other questions are more open to understand the evaluation of alternating training experience (eg. ex ante questionnaire for external tutors: second part);
- questions always evaluate groups of people (eg. ex post questionnaire for internal tutors: first part), only in some contexts they refer to individuals (eg. ex ante questionnaire for internal tutors: second part)

Who-what value

- Students level of achievement of learning objectives identified by the alternating training project;
- The acquisition of skills: citizenship, creativity and innovation, transversal soft, technical and professional skills
- Tutors and institutions involvement in the alternating training process with students;
- The quality of the project, depending on the results obtained and the resources deployed (efficiency and effectiveness);
- The level of competence achieved by the students in relation to the training project agreed;
- The departure with the results achieved and the expectations, the personal project and work, the adequacy of the project drawn up;
- The educational goals of the alternating training and the educational offer, the level of correspondence with the demand of institutions/ companies;
- The technical/ scientific offer of institutions/ companies and the level of availability and hospitality.
- These process requirements are generally classified as: diversity and inclusion, anticipation and reflection, openness and transparency, responsiveness and adaptive change.

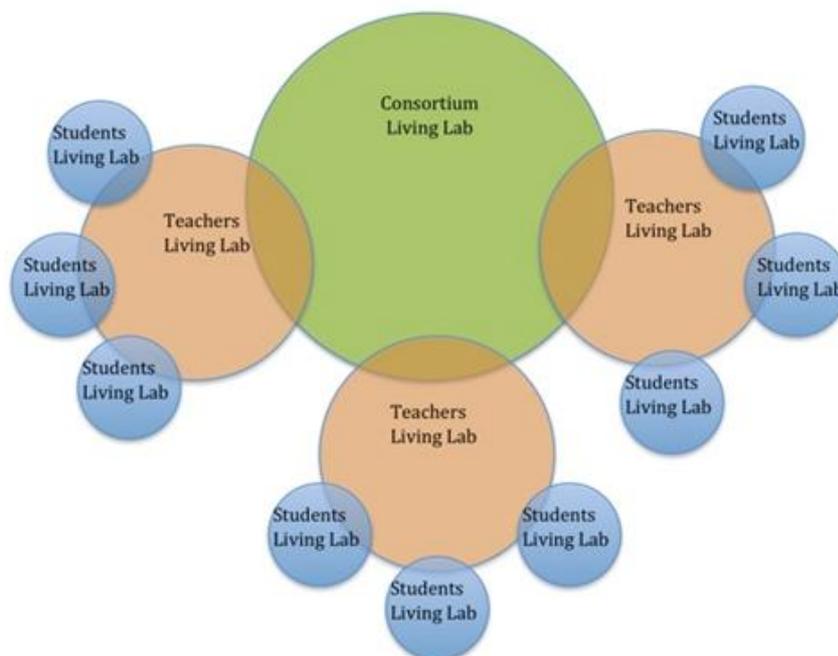


Figure 3: Structure and processes of DESCI living lab approach.

QUALITATIVE ANALYSIS

Indicators: performance and growing of the students (qualitative data).

Dimension: how students improve the essential skills of Desci and where they are in the learning process.

Subject: the main actors involved in Desci (students, training tutors, teachers).

Area: the main points of value in learning and monitoring process.

INDICATORS	DESCRIPTION	DIMENSION
PERFORMANCE	Improving the performance of the students involved in the testing phase	Strengthening the skills of creativity and innovation Acquiring improved planning and project management Acquiring social and civic competences Strengthening social skills
GROWING	Positive self-assessment evaluation from students	Acquiring greater knowledge of contexts and ways of working. Raising awareness of the opportunities offered by the curriculum Strengthening motivation Increasing professional interests of students

SUBJECTS	AREAS
Student	Knowledge input Tutored report Knowledge/ skills acquired Learning
Training Tutor	Tutor corporate knowledge/ skills of the student Ability to interact Student learning Student change
Teacher	School tutor/ teacher knowledge/ skills of the student Ability to interact Student learning Student change

2. ASSESSMENT METHODOLOGY

2.1. Assessing skills and competences in DESCI

Assessment is in itself a vital part of the creative process, starting with the identification of a problem and continuing with assessment and re-assessment of the quality of new ideas and potential solutions, and ending with the resulting creative products.

There are two primary forms of assessment:

- **Summative evaluation:** It involves measuring what students do and do not know at a specific point in time.
- **Formative assessment:** It provides continuous feedback that can be used to accelerate and improve learning (Moskal, Ellis & Keon, 2008; Pringle & Michel, 2007).

Both approaches are included in DESCI evaluation Toolkit. The core of evaluation focuses on student's skills and competences for creativity and innovation.

In particular, the skills considered in DESCI can be grouped into four main areas, which include, different key competences identified by the *European Qualifications Framework*: technical and professional skills, transversal soft skills, citizenship skills, and creativity and innovation skills. It also identifies some additional ones, specific of DESCI's alternating training, as "technical and professional skills" (identifiable from the specific alternating training project and the reference scenario).

TECHNICAL AND PROFESSIONAL SKILLS: identifiable from the specific alternate training project and the reference scenario. These skills will be generally articulated in two main categories:

- cultural area
- organisational and operational area

Examples of technical and professional skills

- ability to identify structural and functional features of an enterprise;
- ability to act autonomously in a specific work environment;
- ability to develop computer applications;
- ability to develop websites;
- ability to communicate to the public technical innovations;
- ability to devise champagne of information for a local community;
- ability to design and differentiate by product marketing strategies.

TRANSVERSAL SOFT SKILLS³

- attitudes and values at work;
- application of knowledge ability;
- thinking skills and competences.

³ As identified in the ESCO (European Skills competences occupation) database <https://ec.europa.eu/esco/portal/home>.

Examples of transversal soft skills

- responsibilities (punctuality and presence);
- teamwork;
- autonomy;
- flexibility;
- ability to make decisions;
- ability to solve problems;
- projects of presentation and communication skills;
- ability to apply theoretical knowledge to real situations and problems.

CITIZENSHIP SKILLS⁴

- **Learning to learn:** Be able to access, gain, process and assimilate new knowledge and skills. This requires effective management of one's learning, career and work patterns, and, in particular, the ability to persevere with learning, to concentrate for extended periods and to reflect critically on the purposes and aims of learning. Individuals should be able to dedicate time to learning autonomously and with self-discipline, but also to work collaboratively as part of the learning process, draw the benefits from a heterogeneous group, and to share what they have learnt. Individuals should be able to organise their own learning, evaluate their own work, and to seek advice, information and support when appropriate. A positive attitude includes the motivation and confidence to pursue and succeed at learning throughout one's life. A problem-solving attitude supports both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude.
- **Sense of initiative and entrepreneurship:** "Proactive project management (involving, for example the ability to plan, organise, manage, lead and delegate, analyse, communicate, de-brief, evaluate and record), effective representation and negotiation, and the ability to work both as an individual and collaboratively in teams. The ability to judge and identify one's strengths and weaknesses, and to assess and take risks as and when warranted, is essential. An entrepreneurial attitude is characterised by initiative, pro-activity, independence and innovation in personal and social life, as much as at work. It also includes motivation and determination to meet objectives, whether personal goals, or aims held in common with others, including at work."
- **Social:** "Communicate constructively in different environments, to show tolerance, express and understand different viewpoints, to negotiate with the ability to create confidence, and to feel empathy. Individuals should be capable of coping with stress and frustration and expressing them in a constructive way and should also distinguish between the personal and professional spheres".
- **Civic:** "To engage effectively with others in the public domain, and to display solidarity and interest in solving problems affecting the local and wider community. This involves critical and creative reflection and constructive participation in community or neighbourhood activities as well as decision-making at all levels, from local to national and European level, in particular through voting. displaying both a sense of belonging to one's locality, country, the EU and Europe in general and to the world, and a willingness to participate in democratic decision-making at all levels. It also includes demonstrating a sense of

⁴ European Parliament Council. European Qualifications Framework for lifelong learning, European Union, 2008.

responsibility, as well as showing understanding of and respect for the shared values that are necessary to ensure community cohesion, such as respect for democratic principles. Constructive participation also involves civic activities, support for social diversity and cohesion and sustainable development, and a readiness to respect the values and privacy of others."

- **Showing risk-taking attitude to solve problems:** "A problem-solving attitude supports both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude."
- **Cooperate and participate:** Identify and employ the most appropriate team working tools to intervene in key organisational and professional contexts).
- **Act independently and responsibly.**
- **Identify links and relations.**
- **Acquiring and interpreting information.**

CREATIVITY AND INNOVATION SKILLS⁵

- **Cognitive dimension:** search and use knowledge and experiences according to the purposes capacity of relating ideas; conceiving systemic and dynamic visions; fluency of thinking; propensity to divergent thinking.
- **Operational dimension:** ability to reflect on the process; to elaborate original proposals in relationship with available materials/objects/conditions; ability to play with possibilities; ability to re-direct the action or the project in relation to unforeseen events.
- **Interactional dimension:** ability of representation and communication of original ideas/projects; readiness to catch the value of alternative views/proposals; ability to re-elaborate proposals/tools/procedures in relationship with new partners.
- **Personal dimension:** readiness to self-motivation; showing resistance to premature closure of projects; tolerance of uncertainty.

2.2. Designing from skills

Designing from skills means thinking about the evaluation from the start, involving students in a self-assessment dimension, which support (following through and monitoring) the alternating training from an early stage

A key aspect is represented by cross-curricular skills which, as defined in the European Qualifications Framework for lifelong learning (see the previous paragraph 2.2.1), "include personal, interpersonal and

⁵ Defined with reference to: Teaching creatively and teaching for creativity, Jeffrey and Craft, 2004; Martha Boden The Creative Mind: Myths and Mechanisms 2004.

intercultural competence and cover all forms of behaviour that equip individuals to participate in an effective and constructive way in social and working life, and particularly in increasingly diverse societies, and to resolve conflict where necessary. Civic competence equips individuals to fully participate in civic life, based on knowledge of social and political concepts and structures and a commitment to active and democratic participation". These skills represent what young people need to enter and act actively in social life/social context and the main outcome of the teaching/ learning process".

2.3. Rubric: authentic assessment tool

The rubrics are an assessment tool used to evaluate the quality of products and services in a given area. The rubric consists of a scale of predetermined scores and a list of criteria that describe the characteristics of each score of the scale. The headings are frequently accompanied by examples of products or services which have the purpose to illustrate each of the scores. These examples are called anchors.

As claimed by Goodrich (1996)⁶, McTighe and Wiggins⁷ (1999), and Kirby-Linton, Lyle and White (1996)⁸, the rubrics represent many important aspects for teachers, for students, and for parents. They are a powerful tool in the teachers' and students' hands to define the quality of learning, and to make the teachers expectations transparent with respect to the task and the mastery of skills . The rubrics help students to deepen themselves in judging the quality of their own work and the work of others (self-evaluation and metacognition).

The rubric of competencies is a matrix that allows identifying, for a specific competence to be measured, the existing link between the elements that compose it:

- The knowledge and the relevant skills activated by the student during learning;
- Indicators;
- The levels of competence (EQF) that the subject highlights in relation to the tasks.

THE RUBRIC

- "Works on full and not on empty": it highlights how much the student "knows how to do with what he/she knows" and not what he/she lacks.
- Highlights what and how he/she learned.
- Uses objective, shared, and public criteria.
- Educates the students to a self-evaluation.
- Delivered before the performance, it directs the student's attention on specific aspects of the product to be processed and the level of mastery to prove.

⁶ Goodrich, H. *Understanding rubrics*, Educational Leadership, 54, 4, 1996.

⁷ McTighe J. Wiggins G., *The understanding by design handbook*, ASCD, Alexandria, Virginia, USA, 1999.

⁸ Kirby-Linton K. Lyle N. White S., *When parents and teachers create a writing standards*, Educational Leadership, 54, 4, 1996.

FORMAT

The <i>Rubric</i> is a guide to the allocation of points based on a set of observable criteria			
TITLE OF TEST OF COMPETENCE TO BE EVALUATED			
EVALUATION SCALE	Advanced Level	Intermediate Level	Basic level
<p>Ranking that allows to evaluate different levels of competence. It can also be numerical. The definition of these values is necessary to appreciate the level of skill mastery, in the complex task</p>			
<p>DIMENSIONS or TRAITS They are the benchmarks for judging the action of the competence of the student. Groupings of criteria set out in more general meaning</p>			
<p>CRITERIA DESCRIPTORS or INDICATORS help to make recognisable the expertise to each level of the rating scale; show evaluators where to look and what to look at, to judge the complex task.</p>			

Assessment rubric of the student's performance in the activities of ALTERNATING TRAINING.

Points of value to improve the essential skills ⁹ Desci.	Points 1 - Rating 1/3	2 points - Rating 4/5	3 points – Rating 6/8	4 points - Rating 9/10
PARTICIPATION	He/ she fails to participate, shows disinterest, creates disorder	Unable to participate, sometimes he/she is distracted and disturbs	Able to participate in an active and purposeful way	He/she can participate with keen interest and enthusiasm
COLLABORATION	He/ she plays no role, is passive and assumes not proactive attitudes and does not respect commitments and deadlines	Laboriously respects tasks, roles and times; proactive in collaborating and listening	Respect tasks, roles and times, and listen actively collaborates	Respect tasks, roles and times, supports the work of other people, promotes collaboration and listens to all
IDEATION	He/ she does not involve in the conception and does not intervene with his/ her personal proposals in the formulation of a working hypothesis	He/ she does not participate in the ideation process, tends to perform what is assigned	Participate in the process of designing,formulating alternative proposals, discusses the possible developments of the work	Participate in the process of design, it proposes ideas, discusses solutions and offers original ideas
IMPLEMENTATION	He/ she seems to be disoriented in the assigned work and does not follow directions given	Show to be carefull in the assigned work and run with effort and realises his assigned work	Carefully and precisely place and complete his assigned work	With care, precision and critical and creative sense completes his assigned work
COMMITMENT AND RESPONSIBILITY '1	He/ she does not assume any role and plays no role	He/she does not engage in collective work if not to lead with jokes or jokes It engages in a discontinuous manner and performs some task of solicitation	It is committed to individual work and support proactively the working group	It is committed to individual work, initiate and support proactively the working group. It assumes responsibility

⁹ Essential Skills in DESCI: **technical and professional, transversal soft, citizenship, creativity and innovation.**

CREATIVITY 'AND INNOVATION	Not involved in the creative design and troubleshooting, and does not intervene with its own proposals in the formulation of a working hypothesis	Does not participate in creative ideation process, it tends to perform what comes from others	Participates in the creative design process, developing innovative and original ideas, formulating alternative proposals, discusses the possible developments of the work	Participate in the process of creating new paths and ways of working, it proposes ideas, discussing solutions and offers original ideas
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Authentic assessments

DESCI evaluation takes into account the innovative approach of the "authentic assessment", developed around the '90s in the United States as a school of thought alternative to the traditional assessment methodologies that propose to assess not only what students know, but what they do with what they know. The aim is to evaluate through a benefit -analysis, rather than through formalised and decontextualised tools such tests. The main issues are schematically described below:

Typical testing	Authentic tasks	Authenticity indicators
Require a single correct answer.	Require a quality product and/ or service and a justification.	Shall establish whether the student can explain, apply, adapt or justify answers, not only the correctness of the answers by using facts or algorithms.
They should not be known in advance because its validity is assured.	They must be known in advance as much as possible; require demands of excellence and essential tasks; lack of experience of "luck."	The tasks, criteria and standards by which the work will be judged are predictable or known, like a piece of acting, the execution of a performance, the engine is adjusted, the proposal to a client, etc.
They are disconnected from one context and realistic constraints.	Require the use of the knowledge of the real world: the student must "make" history, science, etc.	The tasks, criteria and standards by which the work will be judged are predictable or known

TOOL	RECIPIENTS	AIMS (WHY)	TIMING AND MODELS OF SELF- MANAGEMENT (WHEN AND HOW)	HUMAN RESOURCES INVOLVED (FROM WHO AND BY WHO)
<i>Ex ante questionnaire for students (A1.1)</i>	All students who have to start the path of alternating training	Schools detect perceptions, expectations and opinions of students about the experience they are to undertake. At the same time the questionnaire also wants to promote (research-action perspective) sensitivity and a "positive" predisposition of the students towards this path.	Before starting the alternating training period. In self-administration.	The referent teachers collect the questionnaires and re-elaborate them in a co-working space with the students. The data are used by the teachers themselves to reprogram the path and use the results for a more effective communication with the families.
<i>Ex ante questionnaire for companies (A1.2) and for research institutions (A1.3)</i>	The companies and research institutions that will host the students	Schools detect the perceptions and expectations of companies and research institutions. Schools understand also their previous experiences and what their real needs are. This questionnaire raises the actor's awareness and attention towards the sharing path.	Before starting the alternating training period. In self administration.	The referent teachers collect the questionnaires and re-elaborate them in a co-working space with the students. The data are used by the teachers themselves to collaborate and better communicate with companies, research institutions and the other entities involved.
<i>Ex ante questionnaire for families (A1.4)</i> <i>Informative letter for families/ (A1.5)</i>	Families <small>Co-funded by the Erasmus+ Programme of the European Union</small>	Schools try to understand the most effective ways to involve parents/ the information letter could be an efficient instrument.	Beginning of the school year. The guidelines are related in particular to the initial phase of the work school alternating training, but also useful for the phase in itinere and ex post.	The referent teachers (n.4)  <small>Indire Istituto Nazionale di Documentazione, Innovazione e Ricerca Educativa</small>

<p>Ongoing questionnaire for students (A2.1)</p>	<p>Students</p>	<p>Schools investigate and detect in progress (after 2 months) the development of the alternating training path.</p>	<p>In self-administration, all students</p>	<p>The referent teachers (N. 4 for school) collect the questionnaires. The data are used by the teachers themselves to better calibrate and reprogram alternating training activities.</p>
<p>Ex post questionnaire for students (A3.1)</p>	<p>Students</p>	<p>Schools investigate and identify at the end of alternating training path the students' perceptions about the experience, with attention to the impact on the acquisition of skills and growth path.</p>	<p>In self-administration, all students</p>	<p>The referent teachers collect the questionnaires and re-elaborate them in a co-working space with the students. Data are used by the teachers to plan, realise and evaluate the implementation scenarios for their school.</p>
<p>Ex post questionnaire for teachers (A3.2)</p>	<p>Teachers</p>	<p>Schools investigate and identify at the end of alternating training path the internal tutors' perceptions (teacher) about the skills acquired by students.</p>	<p>In self-administration, all the teachers involved.</p>	<p>The referent teachers (N. 4 for school): data are used by the teachers to plan, realise and evaluate the implementation scenarios for their school.</p>
<p>Ex post questionnaire for company tutors (A3.3) and for research institutions (A3.4)</p>	<p>Companies and research institutions</p>	<p>Schools investigate and identify at the end of alternating training path the perception of external tutors (company and research institute tutors) about the skills acquired by students. They investigate also about the stakeholder's satisfaction.</p>	<p>In self-administration, all the tutors involved.</p>	<p>The referent teachers (N. 4 for school) collect the questionnaires. Data are processed through e.g: an excel file. Data are used by the teachers to plan, realise and evaluate the implementation scenarios for their school.</p>

<p>Ex post questionnaire for families (A3.5)</p>	<p>Families</p>	<p>Schools evaluate the families' appreciation about the alternating training paths lived by the students, their results and the consequences</p>	<p>In self-administration, at the end of the experience of the students. Estimated commitment: half an hour for referent teachers; Approximately 15 minutes for each parent who completes the questionnaire; Number of parents who should complete the questionnaire: all</p>	<p>Subjects involved: docent referents of the alternating training in the schools involved (n.4). Data processing: Teachers use a simple excel file of data processing that could directly manage groups of students.</p>
<p>Rubric for training tutors (A3.6)</p>	<p>Training tutors</p>	<p>Schools detect the tutors' evaluations about the acquisition of specific skills by students.</p>	<p>At the end of the training course.</p>	<p>The subjects involved are the training tutors.</p>
<p>Interview for company and research institute(A4.1)</p>	<p>Companies and research institutions of all dimensions. Selection criteria: companies/ research institutions that seem to be "distant" from the school world, therefore the ambition is bringing them closer to the experimental path and sensitising them. Example: choice companies and research institutions that has no previous experience of alternating training.</p>	<p>Schools evaluate companies' and research institutions' expectations about alternating training paths, in order to understand specific needs and promote an "effective relationship" between schools and the world of work.</p>	<p>At the beginning. The interview track should be accompanied by a short letter of presentation and illustration of the project (objectives and purposes).</p>	<p>The identification of companies and research institutions to be interviewed is done by the referent teachers or by other promoters.</p>

<p>Interview for Students (A4.2)</p>	<p>Student sample (selection criteria to be shared with teachers). Hypothesis: - by class of membership (random); - with differentiated school performances - by type/ area of companies in which they are inserted.</p>	<p>Schools detect all the aspects related to perceptions and opinions on the experience of alternating training in order to redefine programming methods together with companies and research institutions. The interview integrates the questionnaire as an alternative analytical tool.</p>	<p>At the end of alternating training path. At least 50 students for each school.</p>	<p>The identification of the students to be interviewed is done by the referent teachers (4). To involve the students who have already done the alternating training experience: the students who perform the activity for the first time could interview the older students.</p>
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3. SUMMARY SYNOPTIC OF THE TOOLS: FUNCTIONALITY AND FEATURES.

INSTRUMENTS AND RESOURCES: EX ANTE QUESTIONNAIRES (A1)

A.1.1 Ex ante questionnaire for Students

1. Have you had previous experience of apprenticeship or work school alternating training?

- YES
 NO

1.1. If YES, you have been informed or participated in the definition of:

Aims

- Much Enough A little Nothing

Activities

- Much Enough A little Nothing

Methods

- Much Enough A little Nothing

**2. What are your expectations about school work alternating training?
(You can indicate one or more answers)**

- Learn content and skills
 Know the world of work closely
 Become more responsible, improve myself
 Increase the possibilities of entering the world of work
 Compare my opinions and my experiences with other people
 Other (specify)

3. Have you expected to participate in the first phase (planning) of the alternating training path together with your teachers?

- Much Enough A little Nothing

4. How interesting do you think the experience you are about to start will be?

- Much Enough A little Nothing

5. How much do you plan to commit to and participate in the activities planned in the alternating training?

- Much Enough A little Nothing

6. Do you plan to encounter difficulties during this experience?

- Much Enough A little Nothing

A.1.2 Ex ante questionnaire for external Tutors (Companies)

(For more details about contents and terminology, please check the glossary at the end of questionnaire).

I. TYPE

- Handicraft Industry Agriculture Business Services

II. PLEASE INDICATE IF YOUR COMPANY IS A SOCIAL ENTERPRISE

- YES
 NO

III. COMPANY DIMENSIONS

- small
 average
 big

IV. NUMBER OF EMPLOYEES

- 0-9
 10-49
 More than 50

V. REFERENCE MARKET

- World
 European
 National
 Regional
 Local

• ESSENTIAL QUESTIONS FOR THE EVALUATION AND THE ANALYSIS OF SKILLS IN DESCI APPROACH (FIRST PART).

1. What are the soft skills of the students you most appreciate?

(You can provide more answers)

- Group workflexibility
 Ability to work independently
 Leadership and coordination skills
 Creativity
 Negotiation
 Other (specify): _____

2. What are the most useful skills for a company that school students should have?

(You can provide more answers)

<i>Skills</i>	<i>Detail</i>
<input type="checkbox"/> Technical and professional	
<input type="checkbox"/> Linguistic area	
<input type="checkbox"/> ICT	
<input type="checkbox"/> Citizenship area	
<input type="checkbox"/> Creativity and innovation	
<input type="checkbox"/> Other (specify)	

3. Which of the issues listed at points 1 and 2 does your company contribute to develop in students?

4. How much do you agree with the following statements?

(Much; Enough; A little; Nothing)

The school appropriately select the students to be assigned to the companies	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The skills imparted by the school should be updated	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The school should better regulate its students	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The school should strengthen the resourcefulness of young people	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
Companies should be more involved in training activities	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
Communication between schools and businesses should be intensified	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The assessments expressed by the companies on the critical aspects of the paths are often unheard	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The presence of a third party (public or private) would improve the relationship between school / business	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing

5. In your previous experience of apprenticeship and " alternating training ", participation and involvement of your company in the design phase of internships/ traineeships for students was:

- Very significant
- Significant enough
- Not significant
- Not at all significant

- I got no previous experience of apprenticeship/ alternating training

Please indicate the role and the name of who compiled the questionnaire.



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• **QUESTIONS FOR IN-DEPTH ANALYSIS RECOMMENDED BUT NOT COMPULSORY. (SECOND PART)**

1. **What is the number of students that the company has involved in internship/ training/ school-work alternating training courses in the last year?**

N. |_|_|

1.1. **And in the last 3 years?**

- None
- Between 1 and 30
- Between 31 and 50
- Between 51 and 70
- More than 70

2. **If the company did not involve students in internship/ training/ school-work alternating training in the last year, please describe the reasons.**

3. **In the previous 3 years experience of apprenticeship/ work school alternating training, has the company detected strength and weaknesses in the skills/ abilities of the students?**

- YES
- NO

4. **With reference to the following skills, what are the strengths and weaknesses found in pupils in the last 3 years?**

POINTS OF WEAKNESS	Attendance	POINTS OF STRENGTHS	Attendance	DETAILS
Skills		Skills		
Technical and professional¹⁰	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Technical and professional	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	What specific skills are required in the area "Technical - professional"? <hr/> <hr/> <hr/> <hr/>

<p>Linguistic area ¹¹</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p>Linguistic area</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p><i>What are the specific skills required in the "Linguistic area"?</i></p> <hr/> <hr/> <hr/> <hr/>
<p>ICT area¹²</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p>ICT area</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p><i>What are the specific skills required in the "ICT" area?</i></p> <hr/> <hr/> <hr/> <hr/>
<p>Citizenship area¹³</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p>Citizenship area</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p><i>What are specific skills required in the "Citizenship area"?</i></p> <hr/> <hr/> <hr/> <hr/>
<p>Creativity and innovation¹⁴</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p>Creativity and innovation</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p><i>What are the specific skills required in the "creativity and innovation" area?</i></p> <hr/> <hr/> <hr/> <hr/>
<p>Other(specify)</p> <hr/>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes 	<p>Other(specify)</p> <hr/>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes 	

	<input type="checkbox"/> never		<input type="checkbox"/> never	
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5. Has the company taken a few young students to work with them, having had experience in apprenticeships/ traineeships in the last 3 years?

- Never
- In a few cases (no more than 5%)
- In half of the cases
- More than half of the cases

6. Which of these figures of your company operatively follows the students during the internship/ internship/ alternance courses?

- People of the administrative staff
- People in the human resources area
- A senior researcher
- A senior technician
- Employee
- Other (specify) _____

7. Do the following statements reflect the possible reasons why a company carries out internship/ alternating training activities with school's students? Can you express your degree of agreement? (Much; Enough; A little; Nothing)

Motivation	Agreement
It is a way to connect with potential future employees	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
Students represent an added value for the company's growth by introducing new knowledge and skills	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
Students may help the company to meet production or commercial needs	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
These collaborations are a tool to maintain a personal/ emotional relationship with the school	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
Companies are required to contribute to the education and training of young people in the area	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing

Please indicate the role and the name of who compiled the questionnaire.

Glossary

7. Technical and professional: identifiable from the specific alternate training project and the reference scenario. These skills will be generally articulated in two main categories: cultural area, and organisational and operational area

(Examples of technical and professional skills: ability to identify structural and functional features of an enterprise; ability to act autonomously in a specific work environment; ability to develop computer applications; ability to develop websites; ability to communicate to the public technical innovations; ability to devise champagne of information for a local community; ability to design and differentiate by product marketing strategies).

8. Linguistic area. Ability to understand and communicate (listening and processing) orally and written texts of medium/ advanced complexity

9. ICT area. Know and use the main operating systems and technological supports.

10. Citizenship area. Learning to learn: Being able to access, gain, process and assimilate new knowledge and skills. This requires effective management of one's learning, career and work patterns, and, in particular, the ability to persevere with learning, to concentrate for extended periods and to reflect critically on the purposes and aims of learning. Individuals should be able to dedicate time to learning autonomously and with self-discipline, but also to work collaboratively as part of the learning process, draw the benefits from a heterogeneous group, and to share what they have learnt. Individuals should be able to organise their own learning, evaluate their own work, and to seek advice, information and support when appropriate. A positive attitude includes the motivation and confidence to pursue and succeed at learning throughout one's life. A problem-solving attitude supports both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude". **Sense of initiative and entrepreneurship:** "Proactive project management (involving, for example the ability to plan, organise, manage, lead and delegate, analyse, communicate, de-brief, evaluate and record), effective representation and negotiation, and the ability to work both as an individual and collaboratively in teams. The ability to judge and identify one's strengths and weaknesses, and to assess and take risks as and when warranted, is essential. An entrepreneurial attitude is characterised by initiative, pro-activity, independence and innovation in personal and social life, as much as at work. It also includes motivation and determination to meet objectives, whether personal goals, or aims held in common with others, including at work." **Social:** "Communicate constructively in different environments, to show tolerance, express and understand different viewpoints, to negotiate with the ability to create confidence, and to feel empathy. Individuals should be capable of coping with stress and frustration and expressing them in a constructive way and should also distinguish between the personal and professional spheres". **Civic:** "To engage effectively with others in the public domain, and to display solidarity and interest in solving problems affecting the local and wider community. This involves critical and creative reflection and constructive participation in community or neighbourhood activities as well as decision-making at all levels, from local to national and European level, in particular through voting, displaying both a sense of belonging to one's locality, country, the EU and Europe in general and to the world, and a willingness to participate in democratic decision-making at all levels. It also includes demonstrating a sense of responsibility, as well as showing understanding of and respect for the shared values that are necessary to ensure community cohesion, such as respect for democratic principles. Constructive participation also involves civic activities, support for social diversity and cohesion and sustainable development, and a readiness to respect the values

and privacy of others.” **Showing risk-taking attitude to solve problems**: “A problem-solving attitude supports both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude.” **Cooperate and participate**: identify and employ the most appropriate team working tools to intervene in key organisational and professional contexts. **Act independently and responsibly**. **Identify links and relations**. **Acquiring and interpreting information**.

11. Creativity and innovation. **Cognitive dimension**: search and use knowledge and experiences according to the purposes capacity of relating ideas, conceive systemic and dynamic visions, fluency of thinking, propensity to divergent thinking. **Operational dimension**: ability to reflect on the process; to elaborate original proposals in relationship with available materials/ objects/ conditions; ability to play with possibilities; ability to re-direct the action or the project in relation to unforeseen events. **Interactional dimension**: ability of representation and communication of original ideas/ projects; readiness in catching the value of alternative views/ proposals; ability to re-elaborate proposals/ tools/ procedures in relationship with new partners. **Personal dimension**: readiness to self-motivation; showing resistance to premature closure of projects; tolerance of uncertainty.

A.1.3 Ex ante questionnaire for external Tutors (Research Institutions)

I. (For more details about contents and terminology, please check the glossary at the end of questionnaire). Research Institute information

- Public
- Private

II. NUMBER OF EMPLOYEES

- 0-9
- 10-49
- More than 50

III. RESEARCH SECTOR:

• ESSENTIAL QUESTIONS FOR THE EVALUATION AND THE ANALYSIS OF SKILLS IN DESCİ APPROACH (FIRST PART).

1. What are the students' soft skills ¹⁵ that you appreciate most?

(You can provide more answers)

- Group work flexibility
- Ability to work independently
- Leadership and coordination skills
- Creativity
- Negotiation
- Other (specify): _____

2. What are the most useful skills for a Research Institution that school students should have?

(You can provide more answers)

<i>Skills</i>	<i>Details</i>
<input type="checkbox"/> Technical and professional	
<input type="checkbox"/> Linguistic area	

¹⁵ The transversal skills are a kind of co-working skills through the correct behavior in the workplace and the aspects related to interpersonal relationships. (For example, leadership, relational efficiency, teamwork, autonomy, creativity, resourcefulness, negotiation skills, assertiveness)

<input type="checkbox"/> ICT	
<input type="checkbox"/> Citizenship area	
<input type="checkbox"/> Creativity and innovation	
<input type="checkbox"/> Other (specify)	

3. How much do you agree with the following statements?

(Much; Enough; A little; Nothing)

The schools appropriately select the students to be assigned to the research institutions.	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The skills imparted by the school should be updated.	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The school should better regulate its students.	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The school should strengthen the resources to the young people.	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
Research institution should be more involved in alternating training activities.	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
Communication between schools and researchers should be intensified.	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The assessments expressed by the Research Institutions on the critical aspects of the paths are often unheard.	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The schools appropriately select the students to be assigned to the Research Institution.	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing
The presence of a third party (public or private) would improve the relationship between school/business.	<input type="checkbox"/> Much <input type="checkbox"/> Enough <input type="checkbox"/> A little <input type="checkbox"/> Nothing

4. In your previous experience of apprenticeship and " alternating training ", participation and involvement of your Research Institute in the design phase of internships/ trainerships for students was:

- Very significant
- Significant enough
- Not significant
- Not all significant
- I got no previous experience of apprenticeship or alternating training

Please indicates the role and the name of who compiled the questionnaire.

• **QUESTIONS FOR IN-DEPTH ANALYSIS RECOMMENDED BUT NOT COMPULSORY. (SECOND PART)**

1. **What is the number of students that the Research Institute has involved in internship/ training/ school-work alternating training courses in the last year?**

N. |_|_|

1.1. **And in the last 3 years?**

- None
- Between 1 and 30
- Between 31 and 50
- Between 51 and 70
- More than 70

2. **If the Research Institute did not involve students in internship/ training/ school-work alternating training in the last year, please describe the reasons.**

3. **In the previous 3 years experience of apprenticeship/ work school alternating training, has the Research Institute detected weaknesses in the skills/ abilities of the students?**

- YES
- NO

4. **With reference to the following skills, what are the points of strengths and weaknesses found in students in the last 3 years?**

POINTS OF WEAKNESS		POINTS OF STRENGTHS		DETAIL
Skills	ATTENDANCE	Skills	ATTENDANCE	

<p>Technical and professional¹⁶</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p>Technical and professional</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p><i>What specific skills are required in the "Professional technical" area?</i></p> <hr/> <hr/> <hr/>
<p>Linguistic area¹⁷</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p>Linguistic area</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p><i>What specific skills are required in the "Linguistics" area?</i></p> <hr/> <hr/> <hr/>
<p>ICT area¹⁸</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p>ICT area</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p><i>What specific skills are required in the "ICT" area?</i></p> <hr/> <hr/> <hr/>
<p>Citizenship area¹⁹</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p>Citizenship area</p>	<ul style="list-style-type: none"> <input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never 	<p><i>What specific skills are required in the "Citizenship (social and civic)" area?</i></p> <hr/> <hr/> <hr/>

Creativity and innovation²⁰	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Creativity and innovation	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	What are the specific skills required in the "creativity and innovation" area? _____
Other (specify) _____	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Other (specify) _____	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	

5. Did the Research Institute work with some young students who had experience of apprenticeships / trainships in the last 3 years (also for temporary positions)?

- Never
- In a few cases (no more than 5%)
- In half of the cases
- More than half of the cases

6. Which of these operatively figures of your Research Institute follows the students during the internship/ alternance courses?

- People of the administrative staff
- People in the human resources area
- A senior researcher
- A senior technician
- Employees
- Other (specify) _____

7. The following statements reflect the possible reasons why a researcher carries out internship / alternating training activities with school students. Can you express your degree of agreement?

(1.do not agree 2. disagree 3. affordably agree 4.completely agree)

Motivation	Agreement
It isa way to connect with potential future employees	1. do not agree 2. disagree 3.affordably agree 4.completely agree
Students represents an added value for the	1. do not agree 2. disagree 3.affordably agree 4.completely

Research Institute's growth by introducing new knowledges and skills	agree
Students may help the Research Institute to reach objectives and meet deadlines	1. do not agree 2. disagree 3.affordably agree 4.completely agree
These collaborations are a tool to maintain a personal/ emotional relationship with the school	1. do not agree 2. disagree 3.affordably agree 4.completely agree
Research Institute are required to contribute to the education and training of young people in the area	1. do not agree 2. disagree 3.affordably agree 4.completely agree

Please indicate the role and the name of who compiled the questionnaire.

Glossary

12. Technical and professional: identifiable from the specific alternate training project and the reference scenario. These skills will be generally articulated in two main categories: cultural area, and organisational and operational area. (*Examples of technical and professional skills:* ability to identify structural and functional features of an enterprise; ability to act autonomously in a specific work environment; ability to develop computer applications; ability to develop websites; ability to communicate to the public technical innovations; ability to devise champagne of information for a local community; ability to design and differentiate by product marketing strategies).

13. Linguistic area. Ability to understand and communicate (listening and processing) orally and written texts of medium/ advanced complexity

14 ICT area. Know and use the main operating systems and technological supports.

15. Citizenship area. Learning to learn: Being able to access, gain, process and assimilate new knowledge and skills. This requires effective management of one's learning, career and work patterns, and, in particular, the ability to persevere with learning, to concentrate for extended periods and to reflect critically on the purposes and aims of learning. Individuals should be able to dedicate time to learning autonomously and with self-discipline, but also to work collaboratively as part of the learning process, draw the benefits from a heterogeneous group, and to share what they have learnt. Individuals should be able to organise their own learning, evaluate their own work, and to seek advice, information and support when appropriate. A positive attitude includes the motivation and confidence to pursue and succeed at learning throughout one's life. A problem-solving attitude supports both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude". **Sense of initiative and entrepreneurship:** "Proactive project management (involving, for example the ability to plan, organise, manage, lead and delegate, analyse, communicate, de-brief, evaluate and record), effective representation and negotiation, and the ability to work both as an individual and collaboratively in teams. The ability to judge and identify one's strengths and weaknesses, and to assess and take risks as and when warranted, is essential. An entrepreneurial attitude is characterised by initiative, pro-activity, independence and innovation in personal and social life, as much as at work. It also includes motivation and determination to meet objectives, whether personal goals, or aims held in common with others, including at work." **Social:** "Communicate constructively in different environments, to show tolerance, express and understand different viewpoints, to negotiate with the ability to create confidence, and to feel empathy. Individuals should be capable of coping with stress and frustration and expressing them in a constructive way and should also distinguish between the personal and professional spheres". **Civic:** "To engage effectively with others in the public domain, and to display solidarity and interest in solving problems affecting the local and wider community. This involves critical and creative reflection and constructive participation in community or neighbourhood activities as well as decision-making at all levels, from local to national and European level, in particular through voting, displaying both a sense of belonging to one's locality, country, the EU and Europe in general and to the world, and a willingness to participate in democratic decision-making at all levels. It also includes demonstrating a sense of responsibility, as well as showing understanding of and respect for the shared values that are necessary to ensure community cohesion, such as respect for democratic principles. Constructive participation also involves civic activities, support for social diversity and cohesion and sustainable development, and a readiness to respect the values and privacy of others." **Showing risk-taking attitude to solve problems:** "A problem-solving attitude supports

both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude.” **Cooperate and participate:** identify and employ the most appropriate team working tools to intervene in key organisational and professional contexts. **Act independently and responsibly. Identify links and relations. Acquiring and interpreting information.**

16. Creativity and innovation. Cognitive dimension: search and use knowledge and experiences according to the purposes capacity of relating ideas, conceive systemic and dynamic visions, fluency of thinking, propensity to divergent thinking. **Operational dimension:** ability to reflect on the process; to elaborate original proposals in relationship with available materials/ objects/ conditions; ability to play with possibilities; ability to re-direct the action or the project in relation to unforeseen events. **Interactional dimension:** ability of representation and communication of original ideas/ projects; readiness in catching the value of alternative views/ proposals; ability to re-elaborate proposals/ tools/ procedures in relationship with new partners. **Personal dimension:** readiness to self-motivation; showing resistance to premature closure of projects; tolerance of uncertainty.

A.1.4 Ex ante questionnaire for Families

- I. School _____
II. Class attended by the student _____

1. Has your child been previously active in alternating training in companies or research institutions?

- YES
 NO

1.1. If yes, did you feel satisfied with your alternating training experience?

- YES
 NO

2. For the path that is about to start, what do you think alternating training may represent?

- A work opportunity
 An opportunity for training and personal growth
 A compulsory education is enough
 Other (specify _____)

3. Do you think that the experience of alternating training can be useful for developing skills in your children?

- YES
 NO

3.1. If yes, which ones?

- Technical skills
 Relationship/ communication skills
 Other (specify) _____

4. Have you received information from the school concerning this route?

- YES
 NO

5. Have the information received been clear?

- YES
 NO

A.1.5 Letter of information for families

This is an example to inspire a possible letter to families that should take into account the kind of school, the context and National specificities.

TO: The parents of the students

SUBJECT: Presentation of the "Desci" School Work alternating training Project

Dear parents,

With this letter we intend to provide you information on the project of alternating training school work "DESCI",²¹ that we are starting up at the school and involving your children.

In the last period, the focus of evaluation shifted from the disciplinary content to the skills, emphasising, on the one hand the interaction between the theoretical and the practical dimension, and, on the other hand,

Add reference about specific laws and normatives of each Nation and also the directives from the European community. Take attention about the kinds of school and the other environmental characteristics (world of work)..

Add details about the concrete process of alternating training proposed by the school.

the importance of the emotional involvement of the student. In the current European context, the general task of education and training is to promote active citizenship, personal development and well-being in young pupils, as well as transversal skills, including digital ones, necessary for young people to be prepared to interact with the complex labour market.

This is why the alternating training should be aimed not so much at acquiring technical skills as to make understand, especially in the first year, how to operate in an organisational context.

Based on personal attitudes and motivations, students can choose the training path to follow, based on the projects developed by the Class Councils. Thus, they will have the opportunity to pursue specific interests, maximising their level of involvement, their productivity, and their talents.

Through the direct knowledge of the world of work, of its dynamics, and of the skills it requires, students will be stimulated to discover their personal vocation and to deal with operations and practical knowledge based on experience. We expect that pupils can especially develop so-called soft skills, which can be summarised as follows:

- Acquisition of the key skills of learning autonomously (learning to learn, acquire and interpret information, identify links and relationships).

²¹DESCI is funded by the Erasmus Plus program, Key Action K2, by the INDIRE National Agency. The project leader is CNR-IRPPS, partners are organisations coming from the research and training world of Italy, Greece and Spain

- Acquisition of the key skills of interacting in various contexts (interpersonal communication and team working).
- Acquisition of the key skills of being self-entrepreneurs (problem solving, design, autonomy and responsibility in actions).

The DESCI project proposes integrated methodologies, coming from the world of social research and promotes a participatory planning approach, the "living lab", which promotes the students direct participation in the activities and direct collaboration with the expert researchers. In this context, the involvement and participation of the families of the students becomes fundamental, as they can also express their point of view and make an important contribution so that the experience of alternating training is as profitable as possible.

Attached to this letter you will find a simple and concise questionnaire, to which we kindly ask you to reply, as it is very important for us to gather your opinions regarding this initiative.

We remain at your disposal for any further clarification.

Best regards

INSTRUMENTS AND RESOURCES: ONGOING QUESTIONNAIRES (A2)

A.2.1 Ongoing questionnaire for Students

1. With regard to the following aspects, evaluate your alternating training experience so far:

The attention that was given to you by the internal training Tutor:

Very good Good Sufficient Insufficient

The attention that was given to you by the external training Tutor:

Very good Good Sufficient Insufficient

Your chances of participation and involvement in company/research institute life:

Very good Good Sufficient Insufficient

The quality of the teaching material used:

Very good Good Sufficient Insufficient

Your insertion in the workplace and in interpersonal relationships:

Very good Good Sufficient Insufficient

Your understanding in communications:

Very good Good Sufficient Insufficient

Your autonomy and responsibility in carrying out the work:

Very good Good Sufficient Insufficient

Your punctuality and respect of working time:

Very good Good Sufficient Insufficient

Your degree of autonomy in carrying out the work:

Very good Good Sufficient Insufficient

Your opening to recognise errors and correct them:

Very good Good Sufficient Insufficient

Your propensity to perform activities in accordance with the assigned time:

Very good Good Sufficient Insufficient

Your collaboration and willingness to help others:

Very good Good Sufficient Insufficient

Your openness to face new problems and tasks:

Very good Good Sufficient Insufficient

Your ability to generate creative solutions:

Very good Good Sufficient Insufficient

2. Are you satisfied with the experience made so far?

YES

NO

Please, briefly explain why:

3. What are the benefits you are taking from this experience? (You can indicate one or more answers)



Co-funded by the
Erasmus+ Programme
of the European Union



- Learn content and skills
- A chance to test me
- Know the world of work closely
- Become more responsible, improve myself
- Having fun
- Increase the possibilities of entering the world of work
- Compare my opinions and experiences with other people
- Other (specify)-----

4. Are you actively participating?

- very fairly little not at all

4.1. If the answer was “little or “not at all”, what could be done, in your opinion, for getting a higher level of participation?

5. Have you found any difficulty so far?

- very fairly little not at all

5.1. Please specify

6. Have you been stimulated to get in contact with the territory, with other contexts and countries, with diverse social actors, with possible users?

- YES
 NO

6.1. Please, briefly describe:

INSTRUMENTS AND RESOURCES: EX POST QUESTIONNAIRES (A3)

A.3.1 Ex post questionnaire for Students

1. With regard to the following aspects evaluate your overall alternating training training experience:

The attention that was given to you by the internal training Tutor:

Very good Good Sufficient Insufficient

The attention that was given to you by the external training Tutor:

Very good Good Sufficient Insufficient

Your chances of participation and involvement in company/research institute life:

Very good Good Sufficient Insufficient

The quality of the teaching material used:

Very good Good Sufficient Insufficient

Your insertion in the workplace and in interpersonal relationships:

Very good Good Sufficient Insufficient

Your understanding in communications:

Very good Good Sufficient Insufficient

Responsibility in carrying out the work:

Very good Good Sufficient Insufficient

Your punctuality and respect of working time:

Very good Good Sufficient Insufficient

Your degree of autonomy in carrying out the work:

Very good Good Sufficient Insufficient

Your opening to recognise errors and correct them:

Very good Good Sufficient Insufficient

Your propensity to perform activities in accordance with the assigned time:

Very good Good Sufficient Insufficient

Your collaboration and willingness to help others:

Very good Good Sufficient Insufficient

Your openness to face new problems and tasks:

Very good Good Sufficient Insufficient

Your ability to generate creative solutions:

Very good Good Sufficient Insufficient

2. Are you satisfied with the experience made so far?

YES

NO

Please, briefly explain why:

3. The practical experience was:

- Very significant Fairly significant Sufficiently significant Not significant

4. The result of your practical experience was:

- Very good Good Sufficient Insufficient

5. Do you think that the period of alternating training should have a longer duration?

- YES
 NO

6. Regarding the following aspects, which are your impressions?

PHASES	ISSUES (presented and discussed)	Skills / knowledge acquired	Duration	Remarks
Explorative (problem analysis, discussion with experts on the topic, identification of the idea, etc)	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	Could you tell us how to improve this phase? <hr/> <hr/> <hr/>
Achievement (define and realize the product, etc)	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	Could you tell us how to improve this phase? <hr/> <hr/> <hr/>
Evaluation (Idea, project and product evaluation)	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	Could you tell us how to improve this phase? <hr/> <hr/> <hr/>

--	--	--	--	--

7. What are the benefits you are taking from this experience?

(You can indicate one or more answers)

- Learn content and skills
- A chance to test me
- Know the world of work closely
- Become more responsible, improve myself
- Having fun
- Increase the possibilities of entering the world of work
- Compare my opinions and experiences with other people
- Other (specify) _____

8. Was your experience of alternating training interesting?

- Very Fairly Little Not at all

9. Are you actively participating?

- Very Fairly Little Not at all

9.1. If the answer was “little or “not at all”, what could be done, in your opinion, for getting a higher level of participation?

10. Have you found any difficulty so far?

- Very Fairly Little Not at all

Please specify _____

11. Regarding the tasks that have been assigned, indicates the degree of difficulty:

- High Medium Low None

12. Indicate your overall satisfaction with this experience:

- High Medium Low None

13. Are you satisfied with the image of yourself that you have transmitted?

- Very Fairly Little Not at all

14. In which area/ sector have you had practical experience?

.....

15. Briefly describe the main activities you have performed during the experience in order of importance:

- a)
- b)
- c)
- d)

16. You believe that, following the experience of alternating training, your creativity and innovation skills are:

- significantly improved
- fairly improved
- improved
- unchanged

17. You believe that, following the experience of alternating training, your ability to cooperate and to compare yourself with other people in group activities is:

- significantly improved
- fairly improved
- improved
- unchanged

18. You believe that, following the experience of alternating training, your technical-professional skills are:

- significantly improved
- fairly improved
- improved
- unchanged

19. Do you think that, following the experience of alternating training, your language skills are?

- significantly improved
- fairly improved
- improved
- unchanged

20. Do you think that, following the experience of alternating training, your ICT skills (computer) area:

- significantly improved
- fairly improved
- improved
- unchanged

21. Have been stimulated to get in contact with the territory, with other contexts and countries, with diverse social actors, with possible users?

- YES
- NO

21.1. If YES, please specify how?

22. What do you think about the choice of alternating training object, it has been:

- very interesting
- interesting
- uninteresting
- insignificant

23. There have been unexpected events following the path of alternating training and during this experience?

- YES
- NO

23.1. If YES, which ones?

24. Would you repeat this experience?

- YES
- NO

25. Would you recommend this experience to your friend?

- YES
- NO

26. Please, comment your experience in few words:

A.3.2 Ex post questionnaire for internal Tutors (Teacher)

(For more details about contents and terminology, please check the glossary at the end of questionnaire).

STUDENT:

CLASS:

- **Questions for a global evaluation of students' alternating training path.**

1. Regarding the following aspects, please evaluate your alternating training experience:

The external training tutor choice has been.

Very difficult Difficult Normal Insignificant

The external training tutors were.

Very good Good Sufficient Insufficient

Your interaction with external training tutors was.

Very good Good Sufficient Insufficient

The quality of the training tutor material used was.

Very good Good Sufficient Insufficient

What do you think about the choice of alternating training object, it has been.

Very good Good Sufficient Insufficient

Your chances of participation and involvement in the experience were.

Very good Good Sufficient Insufficient

The students were motivated.

Good Sufficient Insufficient

The projects carried out by the students in the experience of alternating training, are.

Very good Good Sufficient Insufficient

The results of the students in the experience of alternating training are.

Very good Good Sufficient Insufficient

2. How do you evaluate the interaction with companies/ research institutions?

- very positive
- quite positive
- not very positive
- not at all positive

3. The participation and involvement of companies and research institutions in the design phase of the alternating training were:

- very significant
- quite significant
- not significant
- not at all significant

4. What impact did the experience of alternating training school-work on the school in terms of dimensions?

Improvement of the internal climate	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> insufficient
Improvement of skills	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> insufficient
Improvement of relations with stakeholders	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> insufficient
Capacity growth of students	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> insufficient
Growth of the internal level of innovation	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> insufficient
Personal and social growth of students	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> insufficient
School's ability to open up to the territory	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> insufficient
Other (specify _____)	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> insufficient

• **Questions for the evaluation of individual students' alternating training path.**

5. Regarding your alternating training experience, which are your impressions about the following phases?

PHASES	ISSUES (presented and discussed)	Skills / knowledge acquired	Duration	Remarks
Explorative <i>(problem analysis, discussion with experts on the topic, identification of the idea, etc)</i>	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	<p>Could you tell us how to improve this phase?</p> <hr/> <hr/> <hr/>
Achievement <i>(define and realize the product, etc)</i>	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	<p>Could you tell us how to improve this phase?</p> <hr/> <hr/> <hr/>

Evaluation (Idea, project and product evaluation)	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	Could you tell us how to improve this phase? <hr/> <hr/> <hr/>

6. What suggestions would you give to improve this experience?

7. How to evaluate the work done by the Teacher's Living Lab, with reference to:

DIMENSIONS	RATING
Quality of ideas	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> Insufficient
Innovativeness of ideas	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> Insufficient
Student growth (soft skills)	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> Insufficient
School's ability to interact with stakeholders	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Sufficient <input type="checkbox"/> Insufficient
Other (specify _____)	

8. Have there been unexpected events following the route of alternating training and this experience?

YES

NO

9. If yes, what were they?

Glossary

19. Technical and professional: identifiable from the specific alternate training project and the reference scenario. These skills will be generally articulated in two main categories: cultural area, and organisational and operational area

(Examples of technical and professional skills: ability to identify structural and functional features of an enterprise; ability to act autonomously in a specific work environment; ability to develop computer applications; ability to develop websites; ability to communicate to the public technical innovations; ability to devise champagne of information for a local community; ability to design and differentiate by product marketing strategies).

20. Linguistic area. Ability to understand and communicate (listening and processing) orally and written texts of medium/ advanced complexity

21. ICT area. Know and use the main operating systems and technological supports.

22. Citizenship area. Learning to learn: Being able to access, gain, process and assimilate new knowledge and skills. This requires effective management of one's learning, career and work patterns, and, in particular, the ability to persevere with learning, to concentrate for extended periods and to reflect critically on the purposes and aims of learning. Individuals should be able to dedicate time to learning autonomously and with self-discipline, but also to work collaboratively as part of the learning process, draw the benefits from a heterogeneous group, and to share what they have learnt. Individuals should be able to organise their own learning, evaluate their own work, and to seek advice, information and support when appropriate. A positive attitude includes the motivation and confidence to pursue and succeed at learning throughout one's life. A problem-solving attitude supports both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude". **Sense of initiative and entrepreneurship:** "Proactive project management (involving, for example the ability to plan, organise, manage, lead and delegate, analyse, communicate, de-brief, evaluate and record), effective representation and negotiation, and the ability to work both as an individual and collaboratively in teams. The ability to judge and identify one's strengths and weaknesses, and to assess and take risks as and when warranted, is essential. An entrepreneurial attitude is characterised by initiative, pro-activity, independence and innovation in personal and social life, as much as at work. It also includes motivation and determination to meet objectives, whether personal goals, or aims held in common with others, including at work." **Social:** "Communicate constructively in different environments, to show tolerance, express and understand different viewpoints, to negotiate with the ability to create confidence, and to feel empathy. Individuals should be capable of coping with stress and frustration and expressing them in a constructive way and should also distinguish between the personal and professional spheres". **Civic:** "To engage effectively with others in the public domain, and to display solidarity and interest in solving problems affecting the local and wider community. This involves critical and creative reflection and constructive participation in community or neighbourhood activities as well as decision-making at all levels, from local to national and European level, in particular through voting, displaying both a sense of belonging to one's locality, country, the EU and Europe in general and to the world, and a willingness to participate in democratic decision-making at all levels. It also includes demonstrating a sense of responsibility, as well as showing understanding of and respect for the shared values that are necessary to ensure community cohesion, such as respect for democratic principles. Constructive participation also involves civic activities, support for social diversity and cohesion and sustainable development, and a readiness to respect the values

and privacy of others.” **Showing risk-taking attitude to solve problems**: “A problem-solving attitude supports both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude.” **Cooperate and participate**: identify and employ the most appropriate team working tools to intervene in key organisational and professional contexts. **Act independently and responsibly**. **Identify links and relations**. **Acquiring and interpreting information**.

23. Creativity and innovation. **Cognitive dimension**: search and use knowledge and experiences according to the purposes capacity of relating ideas, conceive systemic and dynamic visions, fluency of thinking, propensity to divergent thinking. **Operational dimension**: ability to reflect on the process; to elaborate original proposals in relationship with available materials/ objects/ conditions; ability to play with possibilities; ability to re-direct the action or the project in relation to unforeseen events. **Interactional dimension**: ability of representation and communication of original ideas/ projects; readiness in catching the value of alternative views/ proposals; ability to re-elaborate proposals/ tools/ procedures in relationship with new partners. **Personal dimension**: readiness to self-motivation; showing resistance to premature closure of projects; tolerance of uncertainty.

A.3.3 Ex post questionnaire for external Tutors (Companies)

(For more details about contents and terminology, please check the glossary at the end of questionnaire).

- **Questions for a global evaluation of students' alternating training path.**

I. **Alternating Training period:** FROM TO

II. **Time of participation:** FROM TO

III. **Alternating Training phases:**

- Explorative Achievement Evaluation

1. **Regarding the following aspects, please evaluate your alternating training experience:**

The internal training tutors were.

- Very good Good Sufficient Insufficient

Your interaction with the internal training tutors was.

- Very good Good Sufficient Insufficient

Your interaction with the internal training tutors of the research world was.

- Very good Good Sufficient Insufficient

Your chances of participation and involvement in the experience were.

- Very good Good Sufficient Insufficient

What do you think about the choice of alternating training object, it has been.

- Very good Good Sufficient Insufficient

The projects carried out by the students in the experience of alternating training, are.

- Very good Good Sufficient Insufficient

The student's results in the experience of alternating training are.

- Very good Good Sufficient Insufficient

2. **How the school context has facilitated the student's learning process:**

(1 = not important; 2 = important enough; 3 = important)

Commitment	1	2	3
Specific preparation	1	2	3
Adaptation to the work environment	1	2	3
Autonomy/ spirit of initiative	1	2	3
Learning ability	1	2	3
Interpersonal skills	1	2	3
Creativity and ability to innovate	1	2	3

3. **Has the company found any problems during the alternating training period?**

YES

NO

5.1. If yes, please specify which ones

1	With reference to the kind of student's alternating training	
---	--	--

2	With the cooperation with teachers	
3	In organising the student's presence	
4	In organising the training tutor activity	
5	In carrying out the training activity	
6	Other (specify):	

4. With reference to the following skills, what are the strengths and weaknesses found in the student?

POINTS OF WEAKNESS	ATTENDANCE	POINTS OF STRENGTHS	ATTENDANCE	DETAILS
Skills		Skills		
Technical and professional ²²	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Technical and professional	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	<i>What specific skills are required in the "Technical and professional" area?</i> <hr/> <hr/> <hr/>
Linguistic area ²³	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Linguistic area	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	<i>What specific skills are required in the "Linguistics" area?</i> <hr/> <hr/> <hr/>
ICT area ²⁴	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Computer area	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	<i>What specific skills are required in the "ICT" area?</i> <hr/> <hr/> <hr/>

Citizenship area²⁵	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Citizenship area	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	<i>What specific skills are required in the "Citizenship (social and civic)" area?</i> <hr/> <hr/> <hr/>
Creativity and innovation²⁶	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Creativity and innovation	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	<i>What are the specific skills required in the "creativity and innovation" area?</i> <hr/> <hr/> <hr/>

5. Express your satisfaction with the following behavioral and cognitive aspects of the students:

Punctuality	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Operosity/ sense of responsibility	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Gumption	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Sociability/ relationships with colleagues and superiors	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Ability to work in a group	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Availability to listening and learning	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Motivation	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Understanding of the activities of the area in which it was inserted	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>

Ability to analyse and critical spirit	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Ability to synthesise	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Decision-making ability and initiative	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Interest/ curiosity for the activities carried out	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Availability to change your ideas	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Autonomy in carrying out the assigned tasks	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Overall level of learning achieved	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Creativity and innovation	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>

6. Are you satisfied about the experience?

- YES
 NO

7. The practical experience carried out by the students was:

- It is very significant
 It is quite significant
 little significant
 Nothing significant

8. The result of the practical experience of the students was:

- good discret sufficient insufficient

9. Do you think that the period of alternating training should be longer?

- YES
 NO

10. Regarding your alternating training experience, which are your impressions about the following phases?

PHASES	ISSUES (presented and discussed)	Skills / knowledge acquired	Duration	Remarks

Explorative <i>(problem analysis, discussion with experts on the topic, identification of the idea, etc)</i>	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	Could you tell us how to improve this phase? <hr/> <hr/> <hr/>
Achievement <i>(define and realize the product, etc)</i>	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	Could you tell us how to improve this phase? <hr/> <hr/> <hr/>
Evaluation <i>(Idea, project and product evaluation)</i>	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	Could you tell us how to improve this phase? <hr/> <hr/> <hr/>

11. What suggestions would you give to improve this experience?

Please indicates the role and the name of who compiled the questionnaire.

Glossary

24. Technical and professional: identifiable from the specific alternate training project and the reference scenario. These skills will be generally articulated in two main categories: cultural area, and organisational and operational area

(Examples of technical and professional skills: ability to identify structural and functional features of an enterprise; ability to act autonomously in a specific work environment; ability to develop computer applications; ability to develop websites; ability to communicate to the public technical innovations; ability to devise champagne of information for a local community; ability to design and differentiate by product marketing strategies).

25. Linguistic area. Ability to understand and communicate (listening and processing) orally and written texts of medium/ advanced complexity

26. ICT area. Know and use the main operating systems and technological supports.

27. Citizenship area. Learning to learn: Being able to access, gain, process and assimilate new knowledge and skills. This requires effective management of one's learning, career and work patterns, and, in particular, the ability to persevere with learning, to concentrate for extended periods and to reflect critically on the purposes and aims of learning. Individuals should be able to dedicate time to learning autonomously and with self-discipline, but also to work collaboratively as part of the learning process, draw the benefits from a heterogeneous group, and to share what they have learnt. Individuals should be able to organise their own learning, evaluate their own work, and to seek advice, information and support when appropriate. A positive attitude includes the motivation and confidence to pursue and succeed at learning throughout one's life. A problem-solving attitude supports both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude". **Sense of initiative and entrepreneurship:** "Proactive project management (involving, for example the ability to plan, organise, manage, lead and delegate, analyse, communicate, de-brief, evaluate and record), effective representation and negotiation, and the ability to work both as an individual and collaboratively in teams. The ability to judge and identify one's strengths and weaknesses, and to assess and take risks as and when warranted, is essential. An entrepreneurial attitude is characterised by initiative, pro-activity, independence and innovation in personal and social life, as much as at work. It also includes motivation and determination to meet objectives, whether personal goals, or aims held in common with others, including at work." **Social:** "Communicate constructively in different environments, to show tolerance, express and understand different viewpoints, to negotiate with the ability to create confidence, and to feel empathy. Individuals should be capable of coping with stress and frustration and expressing them in a constructive way and should also distinguish between the personal and professional spheres". **Civic:** "To engage effectively with others in the public domain, and to display solidarity and interest in solving problems affecting the local and wider community. This involves critical and creative reflection and constructive participation in community or neighbourhood activities as well as decision-making at all levels, from local to national and European level, in particular through voting, displaying both a sense of belonging to one's locality, country, the EU and Europe in general and to the world, and a willingness to participate in democratic decision-making at all levels. It also includes demonstrating a sense of responsibility, as well as showing understanding of and respect for the shared values that are necessary to ensure community cohesion, such as respect for democratic principles. Constructive participation also involves civic activities, support for social diversity and cohesion and sustainable development, and a readiness to respect the values and privacy of others." **Showing risk-taking attitude to solve problems:** "A problem-solving attitude supports

both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude.” **Cooperate and participate:** identify and employ the most appropriate team working tools to intervene in key organisational and professional contexts. **Act independently and responsibly.** **Identify links and relations.** **Acquiring and interpreting information.**

28. Creativity and innovation. **Cognitive dimension:** search and use knowledge and experiences according to the purposes capacity of relating ideas, conceive systemic and dynamic visions, fluency of thinking, propensity to divergent thinking. **Operational dimension:** ability to reflect on the process; to elaborate original proposals in relationship with available materials/ objects/ conditions; ability to play with possibilities; ability to re-direct the action or the project in relation to unforeseen events. **Interactional dimension:** ability of representation and communication of original ideas/ projects; readiness in catching the value of alternative views/ proposals; ability to re-elaborate proposals/ tools/ procedures in relationship with new partners. **Personal dimension:** readiness to self-motivation; showing resistance to premature closure of projects; tolerance of uncertainty.

A.3.4 Ex post questionnaire for external Tutors (Research Institutions)

(For more details about contenents and terminology, please check the glossary at the end of questionnaire).

- **Questions for a global evaluation of students' alternating training path.**

- I. **Alternating Training period:** FROM TO
- II. **Time of participation:** FROM TO
- III. **Alternating Training phases:**
 Explorative Achievement Evaluation

1. **Regarding the following aspects, please evaluate your alternating training experience:**

The internal training tutors were.

- Very good Good Sufficient Insufficient

Your interaction with the internal training tutors was.

- Very good Good Sufficient Insufficient

Your interaction with the internal training tutors of the research world was.

- Very good Good Sufficient Insufficient

Your chances of participation and involvement in the experience were.

- Very good Good Sufficient Insufficient

What do you think about the choice of alternating training object, it has been.

- Very good Good Sufficient Insufficient

The projects carried out by the students in the experience of alternating training, are.

- Very good Good Sufficient Insufficient

The student's results in the experience of alternating training are.

- Very good Good Sufficient Insufficient

2. **How the school context has facilitated the student's learning process:**

(1 = not important; 2 = important enough; 3 = important)

1	Commitment	1	2	3
2	Specific preparation	1	2	3
3	Adaptation to the work environment	1	2	3
4	Autonomy/ spirit of initiative	1	2	3
5	Learning ability	1	2	3
6	Interpersonal skills	1	2	3
7	Creativity and ability to innovate	1	2	3

3. **Has the Research Institute found any problems during the alternating training period?**

- YES
 NO

- 3.1. **If yes, please specify which ones.**

With reference to the kind of student's alternating training	
With the cooperation with teachers	
In organising the student's presence	
In organising the training tutor activity	
In carrying out the training activity	
Other (specify)	

4. With reference to the following skills, what are the points of strengths and weaknesses found in the student?

POINTS OF WEAKNESSES	ATTENDANCE	POINTS OF STRENGTHS	ATTENDANCE	DETAILS
Skills		Skills		
Technical and professional ²⁷	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Technical and professional	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	<i>What specific skills are required in the "Professional technical" area?</i> <hr/>
Linguistic area ²⁸	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Linguistic area	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	<i>What specific skills are required in the "Linguistics" area?</i> <hr/> <hr/> <hr/>
ICT area ²⁹	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Computer area	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	<i>What specific skills are required in the "ICT" area.</i> <hr/> <hr/>

Citizenship area ³⁰	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Citizenship area	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	What specific skills are required in the "Citizenship" area <hr/> <hr/> <hr/>
Creativity and innovation ³¹	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Creativity and innovation	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	What are the specific skills required in the "creativity and innovation" area? <hr/> <hr/>
Other (specify) <hr/>	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	Other (specify) <hr/>	<input type="checkbox"/> always <input type="checkbox"/> very often <input type="checkbox"/> sometimes <input type="checkbox"/> never	

5. Express your satisfaction with the following behavioral and cognitive aspects (regarding students):

Punctuality	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Operosity/ sense of responsibility	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Gumption	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Sociability/ relationships with colleagues and superiors	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Ability to work in a group	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Availability to listening and learning	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Motivation	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>

Understanding of the activities of the area in which it was inserted	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Ability to analyse and critical spirit	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Ability to synthesise	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Decision-making ability and initiative	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Interest/ curiosity for the activities carried out	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Availability to change your ideas	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Autonomy in carrying out the assigned tasks	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Overall level of learning achieved	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Possible considerations on some aspects emerged	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>
Creativity and innovation	Not satisfactory at all <input type="checkbox"/> not very satisfactory <input type="checkbox"/> quite satisfactory <input type="checkbox"/> very satisfactory <input type="checkbox"/>

6. Are you satisfied about the experience?

- YES
 NO

7. The practical experience carried out by the students was:

- It is very significant
 It is quite significant
 little significant
 Nothing significant

8. The result of the practical experience of the students was:

- good discret sufficient insufficient

9. Do you think that the period of alternating training should be longer?

- YES
 NO

10. Regarding your alternating training experience, which are your impressions about the following phases?

PHASES	ISSUES (presented and discussed)	Skills / knowledge acquired	Duration	Remarks
Explorative (problem analysis, discussion with experts on the topic, identification of the idea, etc)	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	Could you tell us how to improve this phase? <hr/> <hr/> <hr/>
Achievement (define and realize the product, etc)	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	Could you tell us how to improve this phase? <hr/> <hr/> <hr/>
Evaluation (Idea, project and product evaluation)	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> Very interesting <input type="checkbox"/> Interesting <input type="checkbox"/> Uninteresting <input type="checkbox"/> Insignificant	<input type="checkbox"/> too long <input type="checkbox"/> right <input type="checkbox"/> too short	Could you tell us how to improve this phase? <hr/> <hr/> <hr/>

11. What suggestions would you give to improve this experience?

Please indicate the role and the name of who compiled the questionnaire.

Glossary

29. Technical and professional: identifiable from the specific alternate training project and the reference scenario. These skills will be generally articulated in two main categories: cultural area, and organisational and operational area

(Examples of technical and professional skills: ability to identify structural and functional features of an enterprise; ability to act autonomously in a specific work environment; ability to develop computer applications; ability to develop websites; ability to communicate to the public technical innovations; ability to devise champagne of information for a local community; ability to design and differentiate by product marketing strategies).

30. Linguistic area. Ability to understand and communicate (listening and processing) orally and written texts of medium/ advanced complexity

31. ICT area. Know and use the main operating systems and technological supports.

32. Citizenship area. Learning to learn: Being able to access, gain, process and assimilate new knowledge and skills. This requires effective management of one's learning, career and work patterns, and, in particular, the ability to persevere with learning, to concentrate for extended periods and to reflect critically on the purposes and aims of learning. Individuals should be able to dedicate time to learning autonomously and with self-discipline, but also to work collaboratively as part of the learning process, draw the benefits from a heterogeneous group, and to share what they have learnt. Individuals should be able to organise their own learning, evaluate their own work, and to seek advice, information and support when appropriate. A positive attitude includes the motivation and confidence to pursue and succeed at learning throughout one's life. A problem-solving attitude supports both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude". **Sense of initiative and entrepreneurship:** "Proactive project management (involving, for example the ability to plan, organise, manage, lead and delegate, analyse, communicate, de-brief, evaluate and record), effective representation and negotiation, and the ability to work both as an individual and collaboratively in teams. The ability to judge and identify one's strengths and weaknesses, and to assess and take risks as and when warranted, is essential. An entrepreneurial attitude is characterised by initiative, pro-activity, independence and innovation in personal and social life, as much as at work. It also includes motivation and determination to meet objectives, whether personal goals, or aims held in common with others, including at work." **Social:** "Communicate constructively in different environments, to show tolerance, express and understand different viewpoints, to negotiate with the ability to create confidence, and to feel empathy. Individuals should be capable of coping with stress and frustration and expressing them in a constructive way and should also distinguish between the personal and professional spheres". **Civic:** "To engage effectively with others in the public domain, and to display solidarity and interest in solving problems affecting the local and wider community. This involves critical and creative reflection and constructive participation in community or neighbourhood activities as well as decision-making at all levels, from local to national and European level, in particular through voting, displaying both a sense of belonging to one's locality, country, the EU and Europe in general and to the world, and a willingness to participate in democratic decision-making at all levels. It also includes demonstrating a sense of responsibility, as well as showing understanding of and respect for the shared values that are necessary to ensure community cohesion, such as respect for democratic principles. Constructive participation also involves civic activities, support for social diversity and cohesion and sustainable development, and a readiness to respect the values and privacy of others." **Showing risk-taking attitude to solve problems:** "A problem-solving attitude supports

both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude.” **Cooperate and participate:** identify and employ the most appropriate team working tools to intervene in key organisational and professional contexts. **Act independently and responsibly.** **Identify links and relations.** **Acquiring and interpreting information.**

33. Creativity and innovation. **Cognitive dimension:** search and use knowledge and experiences according to the purposes capacity of relating ideas, conceive systemic and dynamic visions, fluency of thinking, propensity to divergent thinking. **Operational dimension:** ability to reflect on the process; to elaborate original proposals in relationship with available materials/ objects/ conditions; ability to play with possibilities; ability to re-direct the action or the project in relation to unforeseen events. **Interactional dimension:** ability of representation and communication of original ideas/ projects; readiness in catching the value of alternative views/ proposals; ability to re-elaborate proposals/ tools/ procedures in relationship with new partners. **Personal dimension:** readiness to self-motivation; showing resistance to premature closure of projects; tolerance of uncertainty.



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A.3.5. Ex post questionnaire for Families

- I. School _____
II. Class attended by the student _____

1. Was your child satisfied with his/her alternating training experience?
 YES
 NO
2. What do you think about the value of the alternating training experience?
 A job opportunity
 A training opportunity and personal growth
 Traditional school is enough
 Other (specify) _____
3. Has your child encountered difficulties in his alternating training experience?
 YES
 NO

3.1. If yes, what kind of difficulties did he/ she encounter?
 Organisational
 In the activities carried out
 In times
 In the relationship with the environment
 Other
4. Do you think that this experience has been a significant learning opportunity?
 YES
 NO
5. Do you think companies and institutions are actively involved in planning your child's interventions in alternating training school-work?
 YES
 NO
6. Have you had a chance to reflect with your child about the experience?
 YES
 NO
7. Do you think that the experience of alternating training was useful for developing skills in your child?
 YES
 NO
8. In your opinion, can the school benefit from the alternating training experience?
 YES

NO

9. Would recommend this experience to a friend?

YES

NO

10. What would you suggest in order to improve alternating training experience?



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A.3.6. Rubric for external Tutors (Companies/Research Institutions)

STUDENT DATA

NAME

SURNAME

FISCAL CODE:

SCHOOL:

CLASS:

Objective of the training project:

Methodologies, software tools, and working systems used:

DATA OF THE PROMOTER SUBJECT

- Schol
- Company
- Research Institute
- Other stakeholders (please specify) _____

Mechanical code:

Head teacher:

PROJECT DATA SHEET

Host subject:

Address:

Fiscal Code:

Project Code:

Name:

School external training tutor:

- Company
- Research Istitute



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Evaluation of COMPETENCES AND SKILLS:

(4 = advanced; 3 = Intermediate; 2 = basic; 1 = not reached)

To: Training tutor and all other promoter involved in alternating training.

Evaluation: These data could be elaborated by reference teachers of students.

TECHNICAL AND PROFESSIONAL SKILLS	RATING BEFORE ALTERNATING TRAINING EXPERIENCE	RATING AFTER ALTERNATING TRAINING EXPERIENCE
Identify structural and functional features of an enterprise	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Act autonomously in a specific work environment	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Develop computer applications and websites	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Communicate to the public technical innovations	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Design and differentiate by product marketing strategies	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached

TRANSVERSAL SOFT SKILLS	RATING BEFORE ALTERNATING TRAINING EXPERIENCE	RATING AFTER ALTERNATING TRAINING EXPERIENCE
Diagnostic capacity	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Capacity for relationships	<input type="checkbox"/> advanced; <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced; <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Problem solving skills	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Decision-making capacity	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate

	<input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> basic <input type="checkbox"/> not reached
Communication skills	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Ability to organise your work	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Ability to adapt to different cultural and work environments	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Ability to manage stress	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Attitude to group work	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Initiative	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Capacity in flexibility	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Ability in the overall vision	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached

CREATIVITY AND INNOVATION	RATING BEFORE ALTERNATING TRAINING EXPERIENCE	RATING AFTER ALTERNATING TRAINING EXPERIENCE
Cognitive dimension	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Operational dimension	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Interactional dimension	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic

	<input type="checkbox"/> not reached	<input type="checkbox"/> not reached
Personal dimension	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached

CITIZENSHIP SKILLS	RATING BEFORE ALTERNATING TRAINING EXPERIENCE	RATING AFTER ALTERNATING TRAINING EXPERIENCE
Learning to learn	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Sense of initiative and entrepreneurship	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Social and civic skills	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Showing risk-taking attitude to solve problems	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Cooperate and participate	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Act independently and responsibly	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Identify links and relations	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Acquiring and interpreting information	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached



Evaluation of WORK DONE AND THE ABILITIES REACHED BY THE STUDENT IN REFERENCE TO:

(4 = advanced; 3 = Intermediate; 2 = basic; 1 = not reached)

To: Training tutor and all other promoter involved in alternating training.

Evaluation: These data could be elaborated by reference teachers of students.

DIMENSIONS	RATING BEFORE ALTERNATING TRAINING EXPERIENCE	RATING AFTER ALTERNATING TRAINING EXPERIENCE
Capacity for analysis and identification with requirements	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Ability to design in response to needs	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Quality of ideas (internal consistency in relation to the needs identified and external coherence in relation to the aims of the project)	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Innovativeness of ideas	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Quality of the produced delivery	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Quality of the produced delivery	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached
Ability to use data processing tools (questionnaire and software)	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached	<input type="checkbox"/> advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> basic <input type="checkbox"/> not reached

Evaluation of DELIVERY

To: Training tutor and all other promoter involved in alternating training.

Evaluation: These data could be elaborated by reference teachers of students.

INDICATORS Delivery points of value	LEVELS SCORE	DIMENSIONS	CLASS SCORE
Completeness, relevance, organisation	4	The delivery contains all the parts and information that are useful and relevant for the development, even those deriving from its referent teachers and the environment.	
	3	The delivery contains all parts and information that are useful and relevant for development	
	2	The delivery contains the parts and basic information related to the delivery	
	1	The delivery has gaps about completeness and relevance, it is not organic	
Functionality	4	The delivery is excellent from the point of view of functionality	
	3	The delivery is functional based on complete parameters at an acceptable level	
	2	The delivery has minimal functionality	
	1	The delivery has gaps that make the uncertain functionality	
Correctness	4	The product is excellent from the point of view of correct application	
	3	The product is correctly performed according to the acceptability parameters	
	2	The product is managed sufficiently and correctly	
	1	The product has gaps regarding every single part	
Deadlines	4	The period required for the delivery of the product complies with what is indicated and the student has effectively used the time available	
	3	The construction period is slightly larger than indicated, and the student has effectively used the time available	
	2	The period necessary for the realisation is wider than indicated and the student has dispersed the time available	
	1	The student has not respected the terms indicated	

INDICATORS Delivery points of value	LEVELS SCORE	DIMENSIONS	CLASS SCORE
Accuracy	4	Use tools and technologies with precision, dexterity and efficiency.	
	3	Use the tools and technologies with reasonable accuracy and dexterity.	
	2	Use tools and technologies to the minimum of their potential	
	1	Use tools and technologies in a totally inadequate way	
Technical language	4	It has a rich and complex language, even using professional terms in a pertinent way	
	3	The professional technical language used is satisfactory	
	2	Demonstrate the possession of a minimum-sector technical-professional vocabulary	
	1	It has gaps in the technical and professional sector language	

SCORE:

Key levels score:

4 = advanced

3 = Intermediate

2 = basic

1 = not reached

Key Class score:

From 21 to 24: EXCELLENT

From 16 to 20: GOOD

From 11 to 16: SUFFICIENT

From 6 to 10: WEAK

INTERVIEW TRACKS FOR COMPANIES/ RESEARCH INSTITUTIONS AND FOR STUDENTS (A4)

WHY THE INTERVIEW: IT COULD BE USES AS ALTERNATIVE TOOL TO TAKE QUALITATIVE INFORMATIONS. THIS APPROACH IS MORE DIRECT AND CONFIDENTIAL.

WHAT ARE THE USERS: IT COULD BE USEFUL FOR THE INTERNAL TUTORS (TEACHERS) OR FOR THE OTHERS ACTORS INVOLVED IN THE EVALUATION OF ALTERNATING TRAINING PATH.

WHEN TO INTERVIEW: DURING ALL THE PHASES OF THE PROJECT WITH A SAMPLE SURVEY.

A.4.1 Interview track for company and research institute

Presentation

- Indicate the aims and the reasons to explain why propose the interview

The interview aims to explore:

- Previous and "practical" experiences implemented by companies/ research institutions in collaboration with schools.
- Expectations of companies regarding alternating training routes, in order to understand specific needs and promote an "effective relationship" between schools and companies.
- Suggestions on the most effective ways of involving companies in alternating training activities.

Presentation of the interviewed person (role held in the company)

- company/research institute
- number of employees
- business/research sector

Intervention's territorial target (local, regional, national, international)

DIMENSIONS:

A. *Previous experiences and "practices" implemented by companies/ research institutions in collaboration with schools*

- In the last 3 years, how many young students have had experience of apprenticeship/internship in your company/research institution? How many specifically started work school alternating training?
- What characteristics did these experiences have had (times, methods, processes)?
- From which internal figures were followed?
- What kind of relationships has your company/research institution with the school world up to date: realisation of internships/traineeships/ASL?
- Request graduate lists for hiring- realisation of company visits-sponsorship
- Have your company's expectations been met or disappointed? Why?
- What were the difficulties?

B. *Expectations of companies regarding alternating training paths, in order to understand specific needs and promote an "effective relationship" between schools and company/ research institution*

- What are the most requested skills of your company/research institution? Which internal figure should students follow?
- How do you think the educational planning between school company/research institution and should be articulated?
- What should be, in your opinion, the objectives of an effective work school alternating training?
- What are the advantages for students who experience alternating training? And which ones for your company/ research institute?
- What are the disadvantages for students who experience alternating training? And which ones for your company/research institution?
- Which internal management tools would it be useful to use?
- How should you evaluate the assessment?

C. *Suggestions on the most effective ways of involving companies/research institute in alternating training activities*

- How, in your opinion, should the school promote job orientation and the professionalisation of students? With which methods and with which activities?
- What is necessary for the school to improve the alternating training?
- And what to company/research institution?



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A.4.2 Interview track for students

Presentation

- Indicate the aims and the reasons to explain why propose the interview;

The in-depth interview aims to explore the impact of the activities carried out (*Alternating Training*) on the following aspects:

- To bring out and/or verify whether in general the experience of "Alternating Training" has helped to respond to your needs, both material, such as training and development of interpersonal skills, and intangible, such as the transition to adulthood, the enhancement of abilities and improvement of self-esteem. In particular if it has also had an impact on your "way of being at school" (if your school performance has improved substantially and the relationship with the teachers has been strengthened).
- To bring out and/or verify whether participation in the "Alternating Training" and the results obtained have improved your perspectives about future and have improved your awareness of the work that might be useful for the development of your individual, social and professional identity.
- Before the beginning what were your expectations about the activities carried out?
- Did your experience in "Alternating Training" respond to your expectations? Are activities like you imagined?
- What has changed in you following the experience? Eg you feel more confident than you, are you more aware of what you can do, have you learned new things? How satisfied are you with the results obtained?
- Is there anything you would change in your activities?
- Have you noticed a change compared to school and your performance? Have you improved in the activities taught? Do you feel more motivated to go to school after this experience? Has your relationship changed with your teachers? (eg interact more with them, compare yourself more or less, etc. ..)?
- What concrete effects can you recognize when participating in the ASL on your personal growth path? Give me some examples.
- What did you learn most from this experience?

ADDENDUM



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To improve the relationship between school and the world of work.

The school-work alternating training courses are carried out with the aim to:

- promote flexible learning methods that systematically link classroom training with practical experience;
- support students with the acquisition of skills that can be spent on the labor market;
- favour the orientation of young people to support personal vocations and learning styles;
- make a link between educational and training institutions with the world of work;
- link the training offer to the cultural and social development of the territory;
- contribute to the connection with the world of education, still far from the productive reality;
- invest in the development of human resources and collaborating with the world of education;
- be part of a territorial network thanks to the joint collaboration with schools, chambers of commerce and other subjects (public and private);
- allow the development of useful synergies with the territory;
- increase sensitivity to corporate social responsibility;
- contribute to the achievement of European parameters³² in the field of continuous learning (lifelong learning competences).

Based on these considerations, some reflections are proposed below in relation to the conditions necessary to promote the dissemination and success of the school-work alternating training experiences, taking into account the synergy that must combine the advantages for the company/research institute with those for the student:

PROMOTE- the availability of companies/research institutions:

- To expand the audience of companies convinced to be involved in alternating training paths school-work it is necessary to promote initiatives of comparison and dissemination of good practices to make understand/ recognise advantages for the school and for the companies. These advantages are not immediately recognisable: it is necessary to solicit the company so that it is able to "use" the results of the alternating training school work project effectively and efficiently, as well as the collaboration of the students in the pursuit of the normal objectives work during the training period.

³² The European Credit System for Vocational Education and Training (ECVET)(2006), Recommendation 2006/962/EC on key competences for lifelong learning. European Union Law.

STIMULATE- establishment of networks between world of work and schools:

- The resistance of companies/research institution in organising school-work alternating training paths are often determined by "Organisational difficulties"; the initial planning part, if not managed and organised properly, immediately blocks any push towards the outside.

STARTING THE SYNERGY between schools and companies before being in the company:

- More than ever it is opportune that the project of alternating training be defined with congruous in advance of the start of the actual activities in the company, through a design that encompasses the fundamental elements. If the path alternating training is well designed (defining times, responsibilities, clarity on the functions of the training tutor), it could have more possibility to success.

Schools could get in touch with businesses through moments of sharing of knowledges: for example, through school meetings held by business representatives, followed by visits to the company by the students concerned. Ideally it would be a path of alternating training that foresees the possibility on the part of company professionals to perform seminars at schools on specific topics: ad example safety, quality, production, process, laboratories etc.

STRENGTHEN- internal and external communication.

INVOLVING- the companies in the institutional moments and in the events promoted by the school

KEY ELEMENTS:

STEP 1. VALUING THE COMPANIES

The school should listen to the needs of companies, through:

- 1.1. Promoting moments of discussion.
- 1.2. Sharing all kinds of needs

STEP 2. MAKE THE STUDENTS AND TEACHERS PROTAGONISTS

- 1.3. Promote peer learning
- 1.4. Enhance individual and Group skills
- 1.5. Use alternative teaching supports
- 1.6. Promote meetings with families

STEP 3. LIGHT FORMATIVE PACT

- 1.7. Develop a shared pact
- 1.8. Involve all human resources

STEP 4. CREATE VIRTUOUS NETWORK

- 1.9 Valuing experiences and knowledge.

How to use the data collected from the questionnaires and interviews

In the construction phase of the work-school alternating training path, the self-assessment process represents a fundamental step, inevitably destined to condition and guides the successive stages. Hence the centrality of some attributes that qualify an internal evaluation process:

- be situated, that is, attentive to the peculiarities of the educational institution in which it is implemented, in relation to its evolution over time and to the socio-environmental and cultural context in which it acts;
- be plural, that is based on a multiplicity of quantitative and qualitative evidences, able to give back the different perspectives of analysis of the functioning of the school and the points of view of the different actors;
- be inclusive, that is, attentive to the involvement of the various school components, even in the clarity of roles and responsibilities, and its governing bodies;
- be oriented to the development of the improvement plan to be implemented in subsequent years, which is the test of the effectiveness of the self-assessment process itself.

Once the questionnaires are administered, you need to analyse the data and learn to read them critically. They are attached to the toolkit of the matrices in excel format, useful to insert for each questionnaire all the data indicated, then carry out an aggregation and have the overall picture.