Food and Agro-industrial Schools Toward Entrepreneurship by Storytelling and Digital Technology

Intellectual Output 3

Training Programme for the "blended" use of hypervideos re-edited by teachers (teacher-led experimentation)

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List of Partners

NO.	PARTNER	SHORT NAME	COUNTRY
P1 - COORDINATOR	CISITA PARMA Srl	CISITA	Italy
P2	S.P.E.L.L. srl	SPELL	Italy
P3	ISISS GALILEI BOCCHIALINI SOLARI	BOCCHIALINI	Italy
P4	Centrul de Incubare Creativ Inovativ de Afaceri	CICIA	Romania
P5	Bulgarian Chamber of Commerce and Industry	BCCI	Bulgaria
P6 – IO3 LEADER	Professional High School of Food technology	PAVLOV	Bulgaria
P7	Confederaçao Nacional de Jovens Agricultores e Desenvolvimento Rural	CNJ	Portugal
P8	Liceul Technologic Aurel Rainu	RAINU	Romania
P9	Escola Profissional Agricola Quinta da Lageosa	LAGEOSA	Portugal
P10	G.G. Eurosuccess Consulting Ltd	EUROSUCCESS	Cyprus

Foreword

F.A.S.T.E.S.T. project is about involving VET students and teachers from agro-industrial schools in digital storytelling practices, aiming at:

- adopting digital storytelling as an innovative tool to encourage participatory practices, thanks to the creation of mini-companies of students taking the role of digital videomakers

- developing entrepreneurial skills in students, leading them to self-entrepreneurship

- developing digital and cross-curricular skills in VET teachers

Starting from the assumption that storytelling is in itself a powerful mean of transferring knowledge, values, beliefs and ultimately cultural heritage as well, F.A.S.T.E.S.T. project is particularly significant for the countries and industrial sector involved in the project.

From the teacher training side, it is important to note that Southern Europe countries (such as Italy and Portugal) and Eastern Europe countries (such as Bulgaria and Romania) report similar criticalities: a low number of secondary education teachers taking advantage of training / update opportunities on one side, and very few training courses available for the development of teachers' skills.[1]

Taking into account the FDMP industrial sector (Food and Drink Manufacturing and Processing), it is notable that the percentage of highly-skilled workers across Europe is very low when compared to other industrial sectors (14% in agro industrial sector vs 30% average of other sectors). Furthermore, young workers seem to prefer other fields of employment, as number of workers under age 24 is very limited.[2]

On this basis, F.A.S.T.E.S.T. project aims at involving students in telling stories of success of FDMP companies from their own countries, encouraging them to make videos as they are really familiar with such technology as digital natives.

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1 See "OECD TALIS 2013 Results – An International Perspective on Teaching and Learning"
2 See the recommendations of the European Council in the "Conclusions on entrepreneurship in education and training" (02.17.15)

Of course telling stories means becoming familiar with companies and entrepreneurs, getting to know how they established their businesses, from which idea and by which means they got started, and how they succeeded at last through hardships and obstacles.

Project's impacts foresee that students become passionate and enthusiast about how business people from their own countries and cultures established healthy companies. Processing the different elements of a story also help them elaborate various levels of meaning, making them progress from a purely notional learning to a transformative and reflective learning.

The expected result is that secondary education students develop their own entrepreneurial skills and attitude, thus taking into consideration the idea to found their own agro-business after completing their studies.

This also results, from the students' side, in a greater engagement and motivation towards education, thanks to an alternative and innovative method of learning, very different from the traditional one. Increased students' motivation is also expected to contrast ESL (early school leaving) from low achievers students with high risk of school drop.

F.A.S.T.E.S.T. project's program doesn't involve teachers in delivering traditional frontal lesson, but on the opposite students have to work together with teachers in getting to know companies and their stories, writing down the scripts of the stories to tell, and making the videos.

This is a cross-curricular way of learning, because students do not deal with just one particular topic but they have to take into consideration multiple aspects:

- The structure of a story
- The relevant topic of the peculiar company and productive chain they want to talk about (for example the story of a dairy company with all the issues attached to it)
- The relevant historic period the story takes place in
- The digital issues attached to it (the making of the video and its editing)

The digital side of the storytelling activity should engage students even more, as young people are very familiar with digital technology and very happy and motivated to use it in a learning context.

On the other hand, digital technologies are exactly the ones to be developed in VET teachers, as they aren't normally trained to such use of the digital media. Even if they are ICT teachers, they are not used to developed cross-curricular didactic programmes, where technical notions (such as economics or food processing techniques) are learnt together with history and humanities skills.

F.A.S.T.E.S.T. project involves both VET students and teachers in developing 8 hypervideos about 8 stories of success from local FDMP companies.

The partnership is composed of 4 countries – Italy, Portugal, Bulgaria and Romania-, where a VET secondary school and a business expert respectively work together.[3]

Each country is expected to make 2 videos telling about the story of 2 different local companies from the FDMP sector. Videos have then to become hypervideos, as they should be enriched with links that allow navigation among different sequences, with multiple references to didactic notions attached to the story or to the curricular school program (IO2).

Once finished, hyper videos will then be manipulated again by teachers who will adapt them to become proper didactic tools, suitable to be develop blended training cross-curricular school programmes (IO3).

As final Output of the project, a full set of methodological guidelines will be released, as a sort of handbook for the effective use of digital storytelling as a didactic tool for the development of entrepreneurial skills in a secondary school context (IO4).

Intellectual Outputs will be released as OERs (open education resources), available to the widest possible number of users to take advantage of the hyper videos and of the blended training programmes. IOs will then be uploaded as OERs on specialized databases for resources sharing and teachers' professional development of teachers such as the institutional Open Education Europa platform https://www.openeducationeuropa.eu/en,

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[3] F.A.S.T.E.S.T. partnership is completed by an italian technical partner, videomaking expert and responsible for activity C1 (transnational teacher training), and a dissemination expert partner from Cyprus.

the international OER Commons https://www.oercommons.org and Edutopia https://www.edutopia.org/ platforms, the British TES.COM learning community and the Italian Portal Alexandria Http://www.alexandrianet.it/htdocs.

Both hypervideos and the text file, combined into an OER, are freely available for download, reuse & remix under the Creative Commons Attribution-Non Commercial-Share Alike 4.0 Licence (see www.creativecommons.com for further information).

IO1 is a Research-action meant as preparatory study describing the current state of the situation in the 4 participating countries about the effective exploitation of storytelling & digital storytelling for didactic purposes. IO1 is the starting point beyond which local VET schools need to go to efficiently make profit of the educational potential of storytelling and digital technology.

Intellectual Output 2 is the very core of F.A.S.T.E.S.T. project, consisting of 8 student-made hypervideos, available for public consultation on the project's official website www.fastesteu.com, on the official page @fastesteuproject on Facebook social network and on the popular YouTube platform www.youtube.com, as well as paper drawing a full picture of the logistical and pedagogical organization chosen by each school to implement the project's activities and running the videomaking experience, plus the students' and teachers' learning outcomes.

Intellectual Output 3 at last aims at applying to the regular school program the tools which have been developed in Intellectual Output 2. The latter represents a very innovative way to teach sectorial skills related to the agroindustrial sector, as well as a pioneer way to create a path for entrepreneurship learning. In this phase of F.A.S.T.E.S.T. project, Partners explored the chance to use hypervideos during the school curriculum testing them on pupils who did not take part in the videomaking process nor did they watch them before. This aims at verifying the didactic potential and sustainability of the project activities themselves, as well as putting the bases for future replicability and transferability of hypervideos as a new blended learning and teaching model.

I.   Intellectual Output 3 and its overall structure

Intellectual Output 3 is a sort of reality check for all the actions done before.

The hypervideo phase (Intellectual Output 2) was meant as an experimental activity designing new routes on the school traditional path. Involving students and teachers in creating stories, making videos and transforming them into augmented objects (hypervideos) was something extraordinary, bearing excellent results for the fact itself that such a big effort was done to implement a complex process at school.

In the third phase Partners tried to put hypervideos into the school context, applying them to the regular school teaching, making them a new set of didactic tools for the design of teacher-led blended learning programs.

While Intellectual Output 2 was a pupil-led activity, as students were meant to control directly all the phases with just teachers's supervision and assessment, here teachers take the lead. Basically teachers were involved in teams in drafting a teaching program about entrepreneurship using the hypervideos as part of the program – even further, building the whole entrepreneurship development program according to the hypervideos structure and topics and working at their best exploitation.

As entrepreneurship is not normally taught in schools, as no VET study course envisages it as a school subject, and it is seldom included in other proper disciplines, one of the featuring aspect was the high degree of interdisciplinarity of this teaching program. As a matter of fact, teachers had to collaborate and take different topics and contents from different subjects, as many are the features of entrepreneurship that can relate to the most diverse didactic themes.

To properly test the effectiveness of the methodology, it was planned to involve students who did not take part in the video-making process nor did watch any video at all. In this way teachers had the best conditions to assess the validity of their program and to plan any correction if needed.

The output consists of a transferable "training programmmes", usable as OER, that can be used for the "blended" teaching valorisation of hypervideos. The development, testing and validation of guidelines will be carried out which will describe the methodology for the

introduction of hypervideos as a teaching aid useful for the learning of entrepreneurial skills within the students curriculum of secondary VET schools in the agribusiness sector.

The goal is to make an interdisciplinary team of teachers familiarize with the implementation of blended learning experiences focused on the use of hypervideos issued in the form of OER, produced by students as project output no. 2, duly re-edited in "fine tuning" perspective by the teachers themselves, in view of the pedagogical-training needs / constraints / critical points detected. The updating of the materials produced will be carried out, namely the definition of the conditions of delivery at different times, of real and virtual training, with a view to reflective and transformation learning.

From the hypervideos made by students, the methodological and theoretical bases will be clarified, which are useful to "resist" adequately to possible recontextualization operations, providing operational guidelines in order to abstract from the specific context methods and tools to manage similar but not identical cases, mediating the narrative contents of the hypervideos through the filter of theory and reflection, to allow the proper application of solutions to similar problems, or as a stimulus to metacognition.

The "Training Programmes" will also operate a redefinition of the teacher's role struggling with the delivery of hypervideos, not just as a face-to-face "giver" of contents and concepts, but rather as a "story designer", the narrative orchestra leader who is capable of activating practices of collaborative and participated learning.

I.2 IO3 Phases

Intellectual Output 3 basically consists of 3 phases, involving different partners according to their profile and competencies:

	Actions	*Partners involved*
Activity 1	Elaboration of a teaching program (one for each school) about the topic of entrepreneurship	Education oriented Partners: P3 Polo Agro Industriale Parma - IT P6 PGHVT G. Pavlov – BG [Output Leader] P8 Liceul Technologic A. Rainu - RO P9 Escola Profissional Agricola Quinta da Lageosa - PT
Activity 2	Each team of teachers potentially[4] re-edit the hypervideos for didactic purposes	Education oriented Partners: P3 Polo Agro Industriale Parma - IT P6 PGHVT G. Pavlov – BG [Output Leader] P8 Liceul Technologic A. Rainu - RO P9 Escola Profissional Agricola Quinta da Lageosa - PT Technical & Digital Support: P2 SPELL Support to the education/business relationships: Business Partners
Activity 3	Hypervideos (potentially re-edited) are tested on non-video makers students (2 new classes/groups for each school)	Education oriented Partners: P3 Polo Agro Industriale Parma - IT P6 PGHVT G. Pavlov – BG [Output Leader] P8 Liceul Technologic A. Rainu - RO P9 Escola Profissional Agricola Quinta da Lageosa - PT Support to the education/business relationships: Business Partners

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[4] Although the re-editing phase was envisaged in the project's plan, it was not taken into account as something mandatory for all schools. In fact, it was meant as a chance for potential improvement of the hypervideos as didactic tools from the teachers' side. It was then decided that should teachers find their students' hypervideos OK for teaching purposes, they could be tested on non-videomakers students just as they were.

For an effective measurement of the impacts on target groups, during the planning of the experimentations the partnership identified some quantitative indicators to collect an appropriate number of VET students and teachers involved in the experimentations, and of didactic experimentations successfully run:

VET Teachers	VET Students	Experimentations
1 Interdisciplinary Team / Country = 4 Interdisciplinary Teams Composition of the Team: -Headmaster -Teachers with skills in planning the school's study courses and programs con -Teachers with VET and agroindustrial competencies -Teachers with cross-curricular competencies	2 classes or groups / Country 20 students for each class or groups =40 students /Country =160 total students involved	4 Teaching programs (1 each school) about entrepreneurship 2 teaching experimentations * each school =8 teacher-led experimentations with non-videomakers students 2 hypervideos / Country = 8 hypervideos optionally re-edited by the teachers for didactic purposes

II. A didactic program about entrepreneurship

According to these premises, the first phase of IO3 focused on setting the right basis for a didactic valorization of hypervideos as effective resources for the teaching of entrepreneurial skills integrating the standard school curriculum. Differently from previous Output 2, where favourable conditions were set for a students' self-managed project work activity (pupil-led), Output 3 perspective is completely teacher-led, as teachers were asked to design from scratch a blended didactic program about entrepreneurship, using hypervideos from the previous Output 1 and combining them with traditionally tested methodologies.

In this first warm-up phase (IO3 Activity 1), the role of the Output Leader P6 G. Pavlov (Sofia, Bulgaria) was to create, together with the coordinator P1 Cisita Parma, a model format to collect all the teacher-led programs, setting the conditions to validate the experimentations, as well as the fundamental elements defining the training program itself (see below Appendix 1).
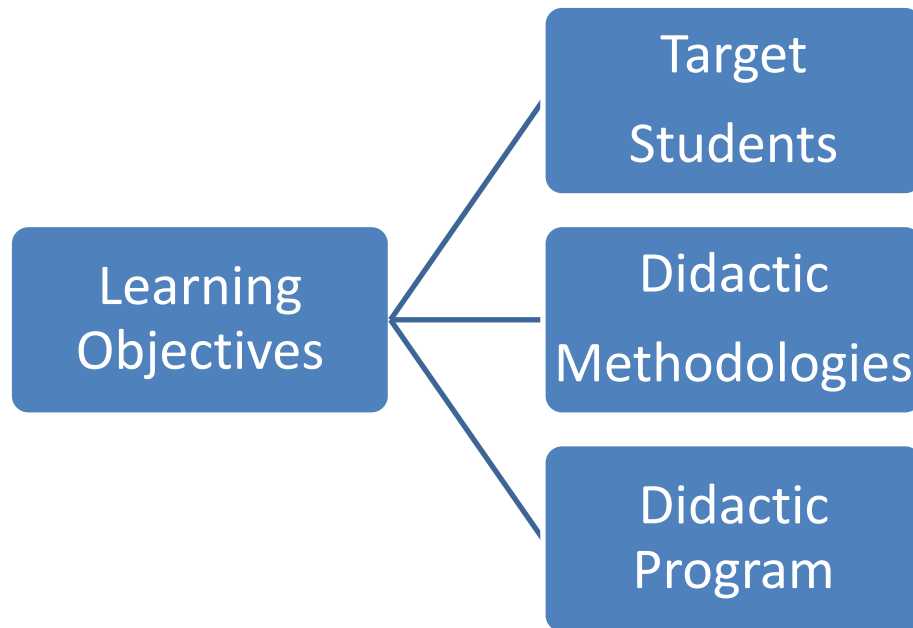
Main objective of Activity 1 was to set the best possible conditions for an effective exploitation of hypervideos as didactic tools to learn the entrepreneurial skills, trying to find out the invariables that structure the program itself, even in a perspective of re-use and transferability.

The purpose of the entire activity is not just to elaborate a training program, but, exploiting the potential of the "blended learning" methodology, to foster the meta-cognitive and reflexive attitude in students, who are the final target beneficiaries. In this way, it will be possible to evolve from a didactic methodology based on the plain transfer of notions and contents to be learned passively, to a model of interactive, collaborative and participative learning, more similar to a Learning Community than to a traditional classroom.

On this basis, the format for the collection of the teaching program (see below Appendix 1) was elaborated considering four basic elements:

    a. Target

    b. Learning objectives

    c. Didactic methodologies

d. Contents of the program

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                                    ┌──────────────────┐
                                    │     Target       │
                                    │    Students      │
                                    └──────────────────┘
┌──────────────────┐                ┌──────────────────┐
│    Learning      │                │    Didactic      │
│   Objectives     │                │  Methodologies   │
└──────────────────┘                └──────────────────┘
                                    ┌──────────────────┐
                                    │    Didactic      │
                                    │    Program       │
                                    └──────────────────┘
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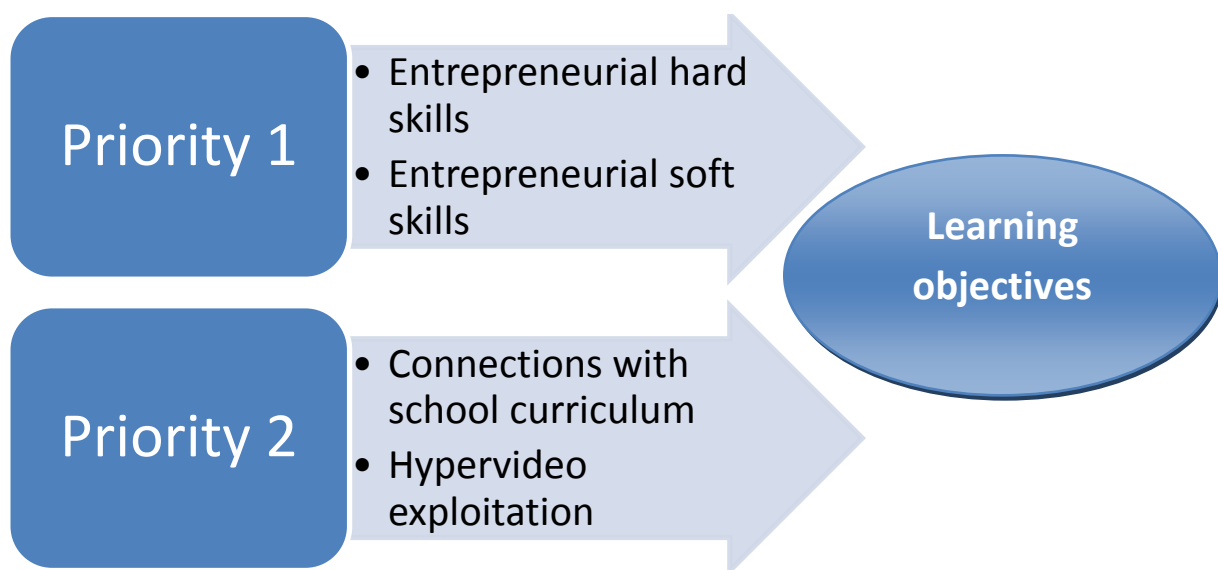
As the scheme above shows, the theoretical core where the training model originates from is the identification of the learning objectives. It is indeed an essential process for a correct deployment of the activities, to outline the purposes and to set the proper direction, according to the profile of the target students.

Generally speaking, schools considered the profiles of target students as the starting point for the design plan. Target students had an average age of 17 and a study course focusing on the agroindustrial sector, despite the relevant differences among countries.

At the same time, to correctly identify the learning objectives, the model envisages the identification of the didactic priorities according to the target students and to the purpose of the activities. This results in the design of a teaching program about entrepreneurship and the development of entrepreneurial skills. As shown by the chart below, the priorities that define the learning objectives themselves are basically two: on one side, the entrepreneurial skills, with regards both to the managerial, behavioural and interpersonal skills (soft skills), and to the technical – sectorial skills and knowledge (hard skills); on the other side the task of identifying, creating and proposing connections with the subjects of the school curriculum, finalized at the development of an original, transversal and cross-curricular program about entrepreneurship envisaging the use of hypervideos as main tool.

For this purpose the model envisages the explicitation of the connection of the experimental program with the four main didactic areas of the partner schools:

- Humanities (National language and literature, history, geography, foreign language and literature)

- Math & Sciences (the so-called STEM subjects)[5]

- Law and economy

- Agroindustrial VET subjects

Priority 1
- Entrepreneurial hard skills
- Entrepreneurial soft skills

Priority 2
- Connections with school curriculum
- Hypervideo exploitation

Learning objectives

The exploitation of hypervideos as main didactic tool of the activity opens the field to the third research topic, such as the modalities of teaching during the experimentation. The digital tool suggests by itself a blended didactic methodology, envisaging at the same time frontal lessons, interactive sessions with the use of the internet and the social media and individual learning in variable proportions. For this reason teachers were asked to describe, for each and every kind, the relevant modalities of teaching during their didactic program. The graphic below briefly shows the main research topics and the main relevant contents:

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[5] STEM is an internationally known acronym which stands for Science, Technology, Engineering, Mathematics.

Frontal	Interactive	Individual
context	hypervideo	information
contents	discussion	research
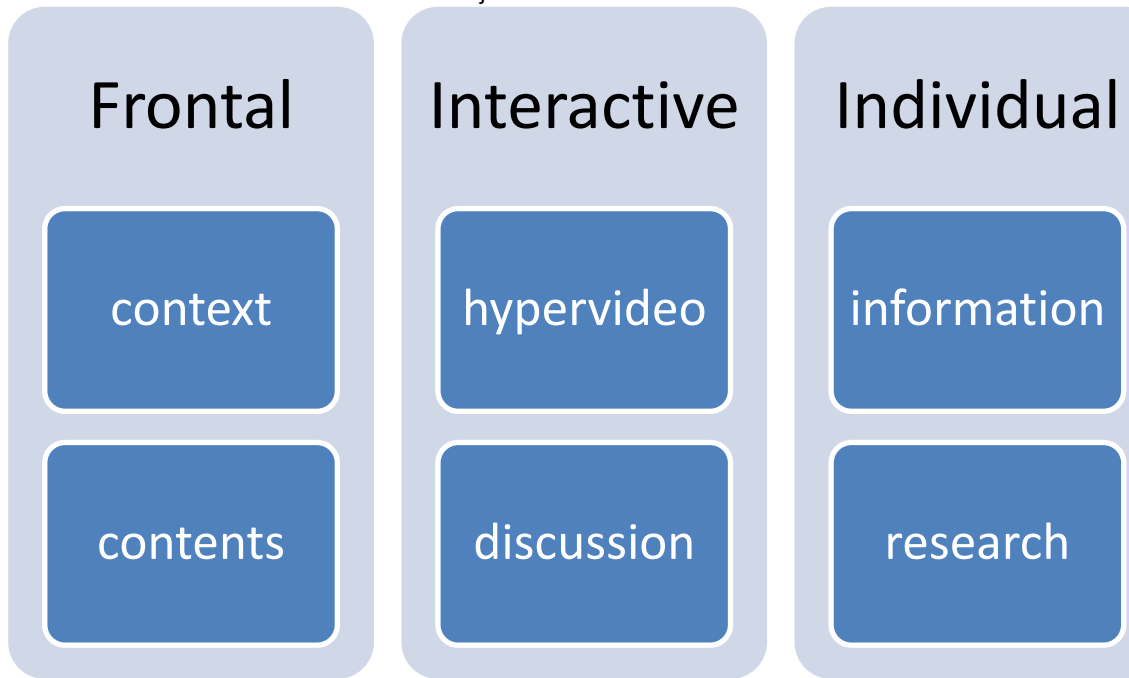
Finally, according to the different elements, each team of teachers worked on the elaboration of a teaching program on the topic of entrepreneurship, with a total number of hours, number of lessons and a detailed program for each lesson. The details that teachers were asked to describe for each module of the program are:

- objectives
- teaching modality
- contents
- exercises/tasks for students
- evaluation / measurement of the outcome of the experimentation

In the following pages we will give evidence of the four teaching programs from each partner school, according to the above mentioned criteria. We will call them by convention "course of entrepreneurship".

II.1 The Italian course of entrepreneurship (P3 Bocchialini)

Concerning IO3 teacher-led experimentation, P3 Bocchialini structured the activities in a similar way to IO2 pupil-led experimentation. Two classes were involved, belonging to the same study courses chosen for the previous Output, whose students did not take part in the videomaking process and who did not see any hypervideo either.

- Class 4A, study course "Management of environment and territory"
- Class 4C, study course "Productions and transformations"

Classes have an average of 20 students each with an average age of 17-18.

Composition of the team of teachers. The team was established at the beginning of the project coordinating all the activities in the different phases of implementation. The personnel involved was:

- The headmaster of ISISS Galilei Bocchialini Solari Mrs Anna Rita Sicuri
- The deputy director and teacher of Agronomy, Appraisal of Farmland and Rural Engineering Mr Fabrizio Manfredi
- The teacher of Law, Economy and Special Education Needs Mrs Marica Vitti
- The teacher of Vegetal and Animal Production and transformation Mr Luigi Antonio Ciuffreda

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The experimentation was delivered according to the following contents and modalities:

A.Duration of the experimentation	5 hours for each of the classes involved	Total duration 10 hours
B.1. Learning objectives	Entrepreneurial Soft Skills	-Spirit of initiative -Problem Solving -Adaptability

		-Ability to work in team
	Hard Skills	-Main elements of the productive chain -Main contents about techniques and technologies of productions and transformations -Elements from the trade market
B.2. Connections with the school curriculum	Humanities	-Local History -History of the productive chain of the local territory
	Math & Science	-Collection and systematization of data -Application of technical and scientifical principles of the tomato and cheese production
	Law and Economy	- Analysis of the legal issues about the quality of productions and safety on the work place -Evaluation of costs and benefits and maximization of profit
	VET Subjects	-Vegetal productions, animal productions, transformation of products -Evaluation of raw materials -Analysis & control of the production processes -Commercialization of primary and secondary productions (milk, tomato, cheese, preserves) -Quality of products
C. Modality of delivery	Frontal Lessons	Teachers introduce the above mentioned contents
	Interactive lessons	-Vision of the Hypervideos -Discussion among students and teachers about the topic of the entrepreneurial skills -Online research to deepen the knowledge of the contents
D. Program delivered	Lesson 1 4th April 2017 1st hour: class 4C 4th hour: class 4A	Teachers: Fabrizio Manfredi, Marica Vitti, Luigi Antonio Ciuffreda Objectives: Stimulating the dialogue about the entrepreneurial skills Modality: Brainstorming with students and teachers as facilitators Contents: Vision of the hypervideos Exercises/ tasks for students: research on the web about the production chain (tomato, milk)
	Lesson 2 21st April 2017 3st hour: class 4A 4th hour: class 4C	Teachers: Fabrizio Manfredi, Marica Vitti, Luigi Antonio Ciuffreda Objectives: Identifying the entrepreneurial soft-skills

		Modality: Work team with teachers as coordinators and systematization of contents Contents: Definition of soft skills (problem solving, adaptability, teamworking, spirit of initiative) Exercises/ tasks for students: research on the web about specific, technical and transversal topics
	Lesson 3 2nd May 2017 4th hour: class 4A 3rd hour: class 4C	Teachers: Fabrizio Manfredi, Marica Vitti, Luigi Antonio Ciuffreda Objectives: Identifying hard-skills of the production chain of tomato and milk Modality: Using concept maps and Office pack tools for the systematization of contents Contents: main elements of the productive chain; main contents about techniques and technologies of productions and transformations; elements from the trade market Exercises/ tasks for students: Creation of a check-list of the criticalities in the production chain and possible solutions to the criticalities
	Lesson 4 8th May 2017 1st hour: class 4A 3rd hour: class 4C	Teachers: Fabrizio Manfredi, Marica Vitti, Luigi Antonio Ciuffreda Objectives: on-going monitoring Modality: Open discussion with teachers Contents: feedback about the cross-curricular contents Exercises/ tasks for students: self-correction of the elaborated products
	Lesson 5 12th May 2017 1st hour: class 4A 2nd hour: class 4C	Teachers: Fabrizio Manfredi, Marica Vitti, Luigi Antonio Ciuffreda Objectives & Modality: Acting the entrepreneurial skills thanks to a drama play (role play) performed by the students Contents: Creating the story, writing the screenplay draft, self-managing and organizing the activity, self-assigning roles; making the video shots

Lesson 5: details about the role-play activity and the drama theatre play: The teachers of P3 Bocchialini chose to involve students in a storytelling activity thanks to the drama and role-play technique. As part of Lesson 5 of the teacher-led program about entrepreneurship, the **object of evaluation** established by the team of teachers was the real development of the

entrepreneurial skills from the students' side, most of all the ability of actually performing the skills themselves with special attention to the **soft skills**. Teachers then asked students to invent a story about the topic "Dismissal of an employee from the workplace", writing down the script and preparing a sketch to be dramatized by themselves as actors, to deliver a theatre representation of the story created as teamwork. The topic was chosen because of its emotional impact on students, making sure they would be engaged and involved. Furthermore, the participative and collaborative methodology allowed students to put in practice, in a partly conscious and partly unconscious way, the entrepreneurial skills themselves that were taught and learnt during the experimentations. As a matter of fact, soft skills are the ones which can be more easily conveyed during classroom activities and which have the greater impact on the expected change as well as on the transformation and reflection induced in students. The real and ultimate **learning goal** is the ability of **acting** and **performing** the **entrepreneurial skills**, which are necessary and unavoidable to work in team, to manage and organize a collaborative working process, to self-assign task and responsibilities as well as to evaluate the outcomes of the process itself. Below it is possible to find the evaluation chart used by the teachers to assess the real extent of autonomy in the process of achieving each single entrepreneurial skill, with greater attention to the interpersonal and interrelational side:

	Poor	Fair	Good	Excellent
Autonomy				
Problem Solving				
Adaptability				
Ability to work in team				
Being appropriate to the role				
Spirit of Initiative				
Assertiveness				
Precision				
Creativity				
Sense of reality				
Expression of the emotional side				

Decision Making				
Negotiation skills				

According to the teachers' evaluation, results show a great enthusiasm and availability to be involved from the students' side, as scores about creativity and spirit of initiative were high on average. More difficult to do than to say was the effective team work with all its attached interpersonal, assertiveness and peer-to-peer negotiation issues, despite the initial positive impact on the students' motivation. Beyond this first organizational *impasse*, questa prima impasse organizzativa, the groups of students showed a good attitude towards problem solving, being able to elaborate strategies and to find solutions suitable for the received tasks.

Some screenshots of the video shootings made during lesson 5 of the teacher-led program. Students analyse the task received and elaborate their common strategy

To better appreciate the interpretation of the drama play on the topic of "the dismissal of an employee", teachers assigned to a class the task to represent the story in a dramatic/tragic way (class 4C), while the other class received the task to represent it in a comic way (class 4A). The video that is available for the public among the didactic materials of the project, shows evidence of both approaches.

Some screenshots of the video shootings made during lesson 5 of the teacher-led program. Students perform the dismissal of an employee (dramatic approach).

II.2 The Bulgarian course of entrepreneurship (P6 Pavlov)

Concerning IO3 teacher-led experimentation, also P6 PHSFT G. Pavlov from Sofia Bulgaria, structured the activities in a similar way to IO2 pupil-led experimentation. Two classes were involved, belonging to two different study courses, whose students did not take part in the videomaking process and who did not see any hypervideo either.

- Group 1, study course "Processing of meat and meat products"
- Group 2, study course "Processing of sugar and sugary products"

Classes have an average of 20 students each with an average age of 16-17.

Composition of team of teachers: The team was established at the beginning of the project and coordinated all the activities throughout each phase of implementation. Personnel involved was:

- The Headmaster of P6 PHSFT Mrs Neli Stoyanova
- The Biology Teacher Mrs Rositsa Popova
- The English Language Teachers Mrs Stefka Dimitrova
- The Literature Teacher Mrs Elena Georgieva

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The experimentation was delivered according to the following contents and modalities:

A.Duration of the experimentation	36 hours for each of the classes involved	Total duration 72 hours
B.1. Learning objectives	Entrepreneurial Soft Skills	The features of an entrepreneur: - Being tidy, disciplined and well educated - Being enthusiastic and willing to communicate his personal experience - Being brave and keeping the faith in his own idea Establishing a relationship between the students and the entrepreneur: - Being open to ask and answer questions - Being open to listen to an experienced business man receiving advices
	Hard Skills	Knowledge of the products and of the production process
B.2. Connections with the school curriculum	Humanities	The link entrepreneurship with literature can be in many aspects: -how to write a good CV, how to evaluate employees on their CV, how to communicate with other companies, orally and in writing. -how to communicate with foreign companies in foreign language formally and informally. -how to describe the company activities of our partners and customers
	Math & Science	Mathematics can be useful in keeping the accounts of the company, the calculation of seeds and yields. And while calculating feed

|		
		rations of animals. Upon studying the biotic and abiotic factors in the 9th grade we can make a forecast for the development of our agribusiness or livestock farm
	Law and Economy	Law in the creation and management of companies have a large number of cases. The economics in the creation and management of companies have a large number of cases
	VET Subjects	In each lesson can be made connections with video and with the examples of the hyper video (supply chain of meat and meat products as well as of baked products).
C. Modality of delivery	Frontal Lessons	a.Teachers introduce the above mentioned contents, as well as the benefits and risks of entrepreneurship
	Interactive lessons	b.Discussion among students and teachers about the topic of the entrepreneurial skills Vision of the Hypervideos Items for discussion: *What qualities must have a person to create a successful business? How to choose our business? How to manage it properly to be sustainable?* c.Online research to deepen the knowledge of the contents
D. Program delivered (both groups of students separately)	Lesson 1	**Teacher**: Mrs E. Georgieva (Literature) **Goals**: To teach students to write and appreciate a good CV when applying for a job or hire workers in the company in the agro-industrial sector. **Modality**: blended frontal and interactive lesson **Contents**: Watching the hypervideos, explaining how to sort your resume, what education and skills are necessary for people dealing with agro-industrial business. Watching the presentation included in the hypervideos **Exercises** / tasks for students: Writing a CV. Reading, choosing and selecting the right employees with the best CV. **Evaluation**: about the the best written CVs

		Comments: While watching the videos, students become more interested and curious to imagine the real business situation which will need knowledge and skills to screen out the necessary qualities of employees in company.
	Lesson 2	**Teacher**: Mrs Bajcheva (English language) **Goals**: To teach students how to lead formal and informal correspondence and make conversation with foreign companies in agro-industrial sector **Modality**: Teachers and students watch the hypervideos and discuss **Content and tasks**: The students make mini-companies and make conversations by phone or on the meeting with description of their products in foreign language. Purpose of the mini-companies of students is to sell ecological-products. **Evaluation**: Written description of products can be evaluated by teacher. The conversations can be evaluated.
	Lesson 3	**Teacher**: Mrs Popova Biology **Goals**: To teach students how to eat healthy, organic food and to keep their organism in good fit **Modality**: Individual learning at home. The students are visiting the hypervideo links at home and then they make proper diet for healthy eating visiting an imaginary farm in the countryside. **Evaluation**: Test about lesson contents
	Lesson 4	**Teacher**: Mrs D.Georgieva (Economics) **Goals**: To make a business plan **Modality**: interactive discussion, written exercises **Content and tasks**: The students are visiting the hypervideos. The aim is to allow students to make economic analysis of a company in a prospective of building one themselves, to find a balance between incomes and expenses as well as to foresee the risk and be prepared for it without giving up farming **Evaluation**: about students who founded and thoroughly prepare their business plan.
	Lesson 5	**Teacher**: Mrs Iltsheva (History)

		Goals: to acquire knowledge about the history & traditions in raising plants and animals **Modality**: Individual learning at home, discussion in classroom **Contents and Tasks**: Students do research on the Internet or from stories of older people, grandparents about what traditional crops and animal breeds that are supposed to be the most adapted to the conditions of the country and could be grown in the future in their farms. **Evaluation**: about the most comprehensive studies of past experience and their active use in future plans for companies.
	Lesson 6	**Teacher**: Mrs Stojanova (Economics) **Goals**: Thanks to watching the video students may decide to open their own company, but they need to learn how first **Modality**: discussion and practice **Contents**: The interviewed entrepreneur advises them to be loyal to the state and now students should be familiar with the administrative requirements for opening and maintenance of corporate accounting **Tasks**: Students find on the Internet the necessary forms and fill them correctly. **Evaluation**: checking the completed forms.
	Lesson 7	**Teacher**: Mrs Cvetkova (VET) **Goals**: Thanks to watching the video students may decide to create a company for milk processing, but they should be familiar with necessary manufacturing machinery. **Modality**: Frontal lesson, visiting the links of hypervideos **Contents**: Learning about the device and operation of necessary machinery **Tasks**: Search on the internet-space of varieties of machines for the processing of milk **Evaluation**: working out of design for equipping
	Lesson 8	**Teacher**: Mrs Kaneva (VET) **Goals**: To master the technology of meat processing **Modality**: Teachers & students watch the hypervideos and discuss **Contents**: Collecting and studying traditional recipes of meat products learn production

		technologies.
		Tasks: Students are introduced to the recipes and technology of the company for meat processing shown in hyper video
		Evaluation: Students should write a small recipe book with the most frequently used recipes
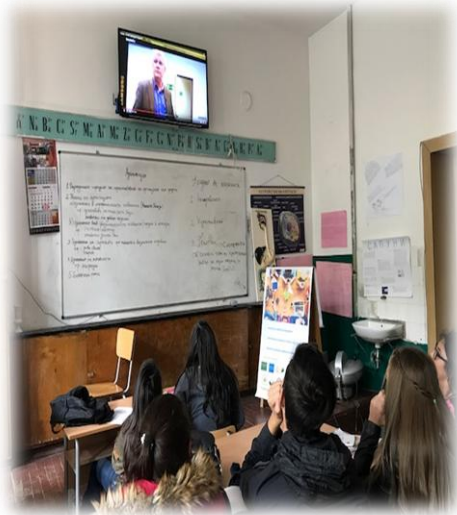
Students from P6 Pavlov during the entrepreneurship classes as part of the teacher-led program of Intellectual Output 3

Sample of an evaluation test. As entrepreneurship is not taught in schools as part of the curricular / national programs, teachers also set some evaluation criteria according to the learning objectives identified above. The evaluation test below shows the contents in terms of knowledge and skills that teachers want to measure in students after taking part in the teacher-led experimentation:

Test / Sample Test Questions

1. Write five faithful statements according to the vision of the entrepreneur that would make his activity successful

2. What are the main preconditions for the development of entrepreneurship

3. Entrepreneurial strategies are...

4. The entrepreneurial process is...

5. Specify one of the main sources of income in today's market economy

6. Which kind of decisions must a wanna-be entrepreneur make to set up a new business:

7. What personal qualities the entrepreneur must possess:

8. List the sources of new ideas for business in the supply chain of meat, milk or bakery:

9. The main elements of SWOT analysis are...

10. A few main types of entrepreneurial activity are...

II.3 The Romanian course of entrepreneurship (P8 Aurel Rainu)

Concerning IO3 teacher-led experimentation, also P8 Liceul Tehnologic "Aurel Rainu" from Fieni, Romania, structured the activities in a similar way to IO2 pupil-led experimentation. Two classes were involved, belonging to two classes of students who did not take part in the videomaking process and who did not see any hypervideo either. Both groups belong to the technological study course that is offered in "Aurel Rainu" school, with particular regard to the course in Economics.

Classes had an average of 20 students each with an average age of 17/18.

Composition of team of teachers: The team was established at the beginning of the project and coordinated all the activities throughout each phase of implementation. Personnel involved was:

The Headmaster, Mrs Elena Izabel Baicu

Teacher of Economics, Mrs Simona Ivan

Teacher of English, Mrs Diana Mandoiu

Teacher of English, Mrs Corina Vancea

Teacher of Biology, Mrs Lidia Vatavu

Teacher of Economics, Mrs Georghita Botea

The experimentation was delivered according to the following contents and modalities:

A.Duration of the experimentation	22 hours for each of the classes involved	Total duration 44 hours
B.1. Learning objectives	Entrepreneurial Soft Skills	The aim is to create for students role models to be followed in life. Through the videos and web research, it is established a connection between the models shown in the videos and students themselves. Students shall learn by doing, thanks to real life examples making them think of entrepreneurship as a way to follow after their graduation.
	Hard Skills	Business English Basics of Economics and of Company Management
B.2. Connections with the school curriculum	Humanities	Students will learn skills related to communication, about how to write a script, to create a story, to speak grammatically correct, to interact with people in a working situation
	Math & Science	Students will learn to calculate, and critical thinking
	Law and Economy	Students will learn to make a virtual firm, will learn about laws and conditions when you establish a business
	VET Subjects	Students will learn about entrepreneurship and about market job and employment
C. Modality of delivery	Frontal Lessons	a.Teachers introduce the above mentioned contents
	Interactive lessons	b.Discussion among students and teachers about the topic of the entrepreneurial skills Vision of the Hypervideos
	Individual study	c.Online research to deepen the knowledge of the contents
D. Program delivered (both groups of students separately)	Lesson 1	Teacher: Mrs. Ivan Simona Goals: to learn about business ideas and plans Modality: PowerPoint presentation in classroom Contents: see below Evaluation / outcome: oral evaluation, feed-back questions
	Lesson 2	Teacher: Mrs. Mandoiu Diana Goals: to learn vocabulary related to business, meetings; to learn how to behave during a business meeting

		Modality: exercises with words from this domain, PowerPoint Presentation in classroom Contents: see below
	Lesson 3	Teacher: Mrs Mandoiu Diana Goals: To learn the rules of a business meeting Modality: Powerpoint presentation in classroom Contents: see below
	Lesson 4	Teacher: Mrs Ivan Simona Goals: to establish a training firm, to know the laws and the rules for establishing a firm Modality: to make a training firm Contents: see below
	Lesson 5	Teacher: Mrs. Mandoiu Diana Goals: to play the role of an entrepreneur Modality: role play Contents: see below Exercises / tasks for students: to act and perform in the role play Comments: students get easily accustomed with the roles, they communicate with the others assuming their roles
	Lesson 6	Teacher: Mrs. Ivan Simona Goals: to form skills and intellectual abilities through exercises and practical applications. To practice skills and abilities of negotiation, promoting and establishing a firm Modality: explanations, discussions, Contents: see below

Students from P8 Aurel Rainu during the entrepreneurship classes as part of the teacher-led program of Intellectual Output 3

Samples from the training program. As explained above, P8 Aurel Rainu organized the teacher-led activity around two main topics:

-Business Administration

-Business English

Both included in the study course with specialization in Economics.

About the **Business Administration** topic, the team of teacher first identified the following Learning Objectives and Key Competences. Students were given the example of a virtual firm, called "Café Brasserie" (bakery and restaurant sector). After gaining all the relevant information from the teacher thanks to the frontal lesson, students were given an evaluation task, where they had to show their understanding of a firm writing down an idea for a new company with relevant business plan:

| Key Competences | Entrepreneurial skills |
| | Teamwork skills |

	Ability of guidance Working autonomy Decision-making and accountability Collection and independent processing of information Creative thinking Application of theoretical knowledge in practice Problem Solving situations Perseverance Organization of the workplace
Specific Competences	Design and presentation of practical business applications specific to a given economic sector (see the example of Café Brasserie)
Learning Objectives	Activity Flow *Café Brasserie*: after the learning unit students will know: -How an economic unit is organized How the organization chart is structured -What are the company compartments and what specific activity is carried out at each level -What data processing methods can be used at each level of an economic unit.
Evaluation Task for students	Task: Ideas for a new business plan Developing a business plan can have the following structure: 1. Summary of a Business Plan (max. 2 pages) 2. General Description of the economic sector 2.1 Field of activity 2.2 NACE Code 2.3 Vision, mission, strategy 3. Business Idea 3.1 Presenting the idea of a business 3.2 Proposed objectives (turnover, profit, number of employees) 3.3 Expected activities 3.4 Resources (material, financial, human, informational) needed 4. Finance 4.1 Need for funding 4.2 Sources of funding 5. Business Marketing 5.1 Customers 5.2 Suppliers 5.3 Competition 5.4 Promotion 5.5 Distribution 6. Development perspectives

	6.1 Economic efficiency indicators: profitability, solvency, indicators risk, necessary for working capital, working capital, net treasury (cash flow)
	6.2 Impact on the environment
	
	According to the above mentioned details, identify and describe your business strategy:
	
	Field of activity……………………………………………………………… .
	The market you are planning to take:
	      Product ……………………………………………………………… .
	      Geographical area ………………………………………………………… .
	      Price ……………………………………………………………… .
	Competitors present on this market:
	      1 ....
	      2……………………………………………………………… .
	      3………………………………………………………………

About the **Business English** topic, the main goal was to let students learn the basic vocabulary to be able to take part in an international business situation, as well as to know how to interact with other stakeholders during a business meeting or negotiation. The most common and useful expressions were taught in a frontal lesson, where students were introduced to the vocabulary and started to get familiar with the typical structure and dialogues of a business meeting.

*Sample Activity #1: Match the vocabulary with its definition

1. Absent ( )	A. To close a meeting
2. To Accomplish ( )	B. To assign roles or tasks to certain people
3. To Address ( )	C. To deal with; speak about
4. To Adjourn ( )	D. Not present
5. Agenda ( )	E. Thinking to gather ideas
6. To Allocate ( )	F. List of objectives to cover in a meeting
7. Brainstorm ( )	G. To succeed in doing something

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8. To Collaborate ( )	A. To begin
9. To Commence ( )	B. Private; not to be shared
10. To Comment ( )	C. To assign
11. Confidential ( )	D. To work together as a pair or group
12. Deadline ( )	E. To make something happen; follow through
13. To Designate ( )	F. To express one's opinion or thoughts
14. To Implement ( )	G. Due date for completion

15. Mandatory ( )	A. Goals to accomplish
16. Minutes ( )	B. On time; not late
17. Objectives ( )	C. Required
18. Punctual ( )	D. To finish
19. To Recommend ( )	E. Raised hands to express an opinion in a vote
20. Show of hands ( )	F. Plan to make something work
21. Strategy ( )	G. A written record or everything said at a meeting
22. To Wrap up ( )	H. To suggest

In order to let students perform the entrepreneurial skills learnt so far, they were invited to interact in a role-play situation, with particular care about the negotiation skills as learning objective. Students worked together to organize the role play and to interpret the business roles and models that were introduced thanks to the hypervideos and to the frontal lessons of the activity.

*Sample Activity #2: Negotiation Skills Role-play

Sales manager

You are a sales manager and you are meeting your boss, the sales director, to request two more members of staff for your team. You have made a note of some of the benefits that can be expected if you get the new staff. Use conditional sentences to explain to the sales director what he/she can expect if your team is increased by two new salespeople.

- Increase overall sales
- Provide better service for important clients
- Find more new customers
- Get more money from existing customers

Sales director

You are sales director listening to a request from your sales manager for two more salespeople for his/her team. Use conditional sentences to explain the increases in performance you expect if you agree to the increase in staff.

- 15 % increase in overall sales
- 10 % increase in sales to important clients
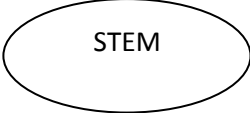- 15 % increase in profit from new customers

II.4 The Portuguese course of entrepreneurship (P9 Quinta da Lageosa)

Concerning IO3 teacher-led experimentation, also P9 Escola Profissional Agricola "Quinta da Lageosa" from Portugal, structured the activities in a similar way to IO2 pupil-led experimentation. Two classes were involved, belonging to two classes of students who did not take part in the videomaking process and who did not see any hypervideo either. Classes had an average of 20 students each with an average age of 17/18 (11th – 12th grades of national education).

Composition of team of teachers: The team was established at the beginning of the project and coordinated all the activities throughout each phase of implementation. Personnel involved was:

- The Headmaster of P9 Quinta da Lageosa Mr Agostinho Duarte Ferreira
- The Maths Teacher Mrs Teresa Paula Runa da Silva Reigones
- The History Teacher Mrs Cristina Maria de Sousa Salvado
- The English Teacher Mrs Maria José Martins

Profile of target students. P9 Quinta da Lageosa is a farming school, with some students living there throughout the year (boarding school), and working on a variety of vocational subjects such as animal production and equiniculture on one side, and plant production, horticulture and floriculture on the other side. The general study course include the following disciplines for all students:

Portuguese English (Humanities) Social Studies	Math ICT (STEM) Biology Chemistry
Agricultural Production Agricultural mechanization (VET) Products transformation	Physical Education Religion or alternative

The experimentation was delivered according to the following contents and modalities:

A.Duration of the experimentation	30 hours for each of the classes involved	Total duration 60 hours
B.1. Learning objectives	Entrepreneurial Soft Skills	Personal qualities and abilities Communication Skills (interpersonal abilities)
	Hard Skills	Business Analysis and Strategy
B.2. Connections with the school curriculum	Humanities	Historic & social background of a specific region Communication skills
	Math & Science	Biology ICT skills Financial calculations for business
	Law and Economy	Socio-economical analysis of the country National industrial processes Market analysis Media and marketing
	VET Subjects	Animal production Animal wellbeing Plant production Transformation of products Production planning Quality assurance Work safety and hygiene
C. Modality of delivery	Frontal Lessons	a.Teachers introduce the above mentioned contents
	Interactive lessons	b.Teachers & students watch the hypervideos and discuss questions Interpretation of relevant data Browsing web links in group Critical thinking Exploiting time effectively Team working
	Individual study	c.Online research to deepen the knowledge of the contents
D. Program delivered (both groups of students separately) Hypervideos to be used	Lesson 1	A general introduction to entrepreneurship
	Lesson 2	The personal features of an entrepreneur
	Lesson 3	Becoming an entrepreneur: the process of establishing an entrepreneurial venture

	Lesson 4	Definition of an action plan
throughout the course as a support tool for the didactic	Lesson 5	How to implement a business plan
	Lesson 6	Focus on the financial resources of a company
	Lesson 7	Business Management & Administration
	Lesson 8	
	Lesson 9	Collaborative entrepreneurship
	Lesson 10	Entrepreneurship in the agro-food sector Specific contents: Introduction of new crops, transformation of products, new ways of production with lower costs
	Lesson 11	Lecture with the entrepreneur from Queijos Braz cheese company (1st hypervideo)
	Lesson 12	Lecture with the entrepreneur from Quinta dos Termos wine company (2nd hypervideo)

Further learning material. During the interactive classroom lessons, students were assigned the task to do some further research to widen the knowledge about entrepreneurship on one side, as well as about ICT skills on the other. Thanks to this activity, students were meant to develop autonomous working skills and most importantly, team work skills. As a result of the interactive classroom activity, students added three more videos to the learning material, to complete the didactic set of hypervideos, about the following topics:

HYPERVIDEO EXPLAINER www.youtube.com http://www.hypervideos.es Ahora puedes vender tus productos directamnente a través del video! Añadir tags, info, links e imagenés. Video tagging y shoppable ... Hypervideo explainer Hypervideo Player Demonstration www.youtube.com The Hypervideo Player is a video search engine that uses the viewer/user's typed words as Hyperlinks to enables the users to input text based on scenes that ...	ICT Definition of hypervideo How does an hypervideo work?

Hypervideo player demonstration	
Vídeo Motivacional - Para Empreendedores www.youtube.com O que você quer ser quando crescer ? Who do you want to be when you grow up?	Entrepreneurship A video inspiring young people to focus on their future careers

Tasks and learning outcomes. It is also notable to highlight that as part of the "Collaborative Entrepreneurship" module, students were asked to actively interact during the lesson, delivering to their peers an explanation/report of the storytelling process as well as their personal view about the whole entrepreneurship experience and encounter with business people. Thanks to this exercise, students were stimulated to develop their communication skills, in order to deliver a proper speech in correct linguistic expression, as well as to reflect on the teaching contents, being able to assimilate them into their personal cultural baggage. Another activity involved students in presenting natural and environmental issues to their peers and teachers, using the video and storytelling techniques. A few students had to plan very brief video-scripts about a relevant natural or environmental issues, and to shoot a short video of a student presenting it as part of the didactic requirements of their study course.

The pictures above and below show some students from P9 Quinta da Lageosa during the interactive tasks of the teacher-led experimentation as explained in the previous paragraph.

III. Outcomes of the experimentations

III.1 Monitoring & Transferability. Teachers' feedback

On the basis of the operative indications received by the Output Leader P6 G. Pavlov from Sofia, working as intermediary and collector of the didactic and procedural issues resulted by the IO3 teacher-led experimentation, the Coordinator P1 Cisita Parma arranged a tool for each interdisciplinary team of teacher for the monitoring of activities (see below, Appendix II). The area of research of the tool and of the activity of investigation is tightly bound to the use of hypervideos as a didactic tool. This idea takes directly to the concept of repeatability and transferability of the whole project, which is not to be terminated after 24 months of implementation, but it should have a long term impact on VET didactics. Keeping in mind these requirements, the Coordinator prepared the questionnaire for the teachers' monitoring and feedback of activities (see below Appendix III), subsequently translated in all the local languages and distributed to each interdisciplinary team of teachers for a joint completion - one questionnaire for each school/country. The questionnaire consists of 56 overall questions, partly one choice partly with multiple choice, with the possibility to add a comment and/or the motivation to the answer provided to each item. One-choice questions are presented in form of "statements" about which the team of teachers had to express their level of agreement or disagreement according to four possibilities:

- Totally agree $\rightarrow$ pt. 4
- Generally agree $\rightarrow$ pt. 3
- Partially agree $\rightarrow$ pt. 2
- Disagree $\rightarrow$pt. 1

To obtain aggregated results for the elaboration of statistics and graphics, while processing questionnaires the Coordinator allocated to each answer the score described above. The items of the questionnaire dealt with more issues that the partnership is interested into, classified according to the following topics:

Section 1	Item 1-8	Organizational issues:
		Effectiveness of the organization for an appropriate delivery of the activities
		Integration of the project with the curricular school activities

|		Involvement of the didactic staff in the experimentation
Section 2	Item 9-17	Contents & Learning Objectives: Didactic of entrepreneurship Connections with the school curriculum
Section 3	Item 18-27	Measurement of the learning outcomes: Positiv /negative outcomes of the experimentation Tool for the evaluation
Section 4	Item 28-37	Appreciation and perceived didactic effectiveness: Impact on the students' motivation towards education and entrepreneurship
Section 5	Item 38-51	Transferability Criteria for the repeatability and transferability of the experimentation to other contexts/ countries, other levels of education/training, other study courses, other profiles of target learners, with particular attention to special needs
Section 6	Item 52-56	Criticalities and areas of improvement

Below we'll offer an aggregated vision of the results according to the topics of research, to deliver a general picture of the outcomes of the experimentation, of the impact on the organization of didactics as well as on the school institution, and of what still has to be done to improve the introduction of entrepreneurial learning in the european VET contexts both in general and in the agroindustrial sector.

About the topics of section 1, in general all 4 countries got encouraging answers, on average between score 3 (equivalent to "generally agree") and score 4 (equivalent to "generally agree"). As a matter of fact, 3 countries out of 4 gave positive answers to Item 1, asking each team / country whether or not the organization of the experimentation was effective for the sake of delivering the experimentation, while Portugal expresses some doubts.

Item 1 - Effective Organization
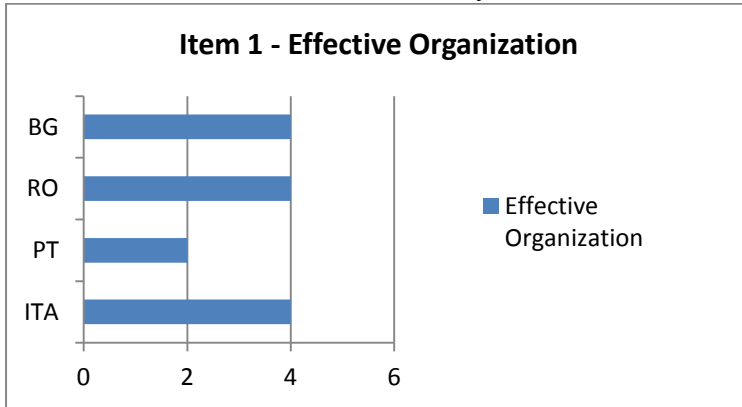
On the opposite, the operation of recruiting more teachers willing to join the team proved to be quite difficult. As a matter of fact, as Item 3 asks whether or not it was easy to find teachers who accepted to take part in the activities, the average data is 2,5, between score 2 (equivalent to "only in part") and score 3 (equivalent to "yes generally"), with a trend towards 2 for Romania and Portugal.

Item 3 - Ease of recruiting teachers
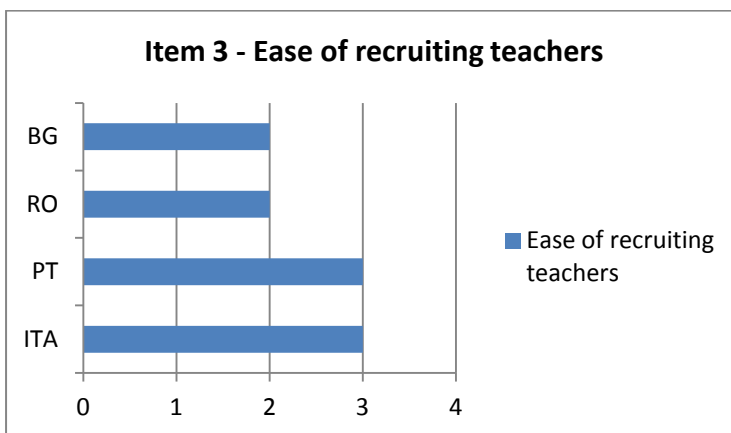
Greater satisfaction instead for the effective achievement of the learning objectives that were set (section 2, item 11): in all 4 countries teachers believe they have been totally achieved (score equivalent to 4, Portugal and Bulgaria) or generally achieved (score equivalent to 3, Italy and Romania).

In section 2 the entrepreneurial traits covered during the experimentation gain particular importance, with soft skills on one side (personal and behavioural skills of the entrepreneur) and hard skills on the other side (technical and sectorial skills). Item 14 of the questionnaire shows a clear prevalence in terms of percentage of the soft skills compared to the hard skills, as teachers dedicated more time and contents on the personal skills because they are believed to have greater motivational, educational and didactic impact on students. In slight

countertrend there's only Portugal, assigning 60% of the entire activity to tecnica and sectorial skill.

Item 14	Italy	Bulgaria	Romania	Portugal	% average
Soft Skills	70	80	60	40	62,5
Hard Skills	30	20	40	60	37,5

On the other side, the focus on soft skills is tightly bound to the evaluations given by teachers to the tasks assigned to students during the experimentation, whose results are positive for more than 80%, with 100% in Portugal, as the chart below shows (section 3, item 26):

Item 26	Italy	Bulgaria	Romania	Portugal
Positive evaluations	80	80	80	100
Negative evaluations	20	20	40	0

According to the results of Item 27, we also have to mention that the evaluation tools used by teachers to assess the students' performances about IO3 teacher-led activities are mostly based on:

-works and researches conducted by the students in team

- oral and multimedia presentations / expositions in front of the classroom

- oral meetings with the teachers

This confirms the fact that the blended didactic methodology influenced the measurement of the learning outcomes as well, allowing teachers to overcome the traditional "classwork" or written examination.

Encouraging perspectives also according to results of Section 4, focusing on the perception of the appreciation of the experimentation from the students' point of view. Answers are on average always above score 3 (equivalent to "generally agree"), as data below show:

Item 32	Students' attitude towards education and school improved after the experimentation	Average 2,75
Item 33	During the experimentation students were more open to the learning process compared to the traditional lessons	Average 3,75
Item 34	During the experimentation students were more ready to make connections among the different school subjects compared to the traditional lessons	Average 3,50
Item 35	Thanks to experimentation students developed/increate their interest to further education	Average 3,50
Item 36	Students developed curiosity and interest for the topic of entrepreneurship	Average 3,75
Item 37	Students showed interest to undertake a self-entrepreneurial career path in the future	Average 3,25

It is important to highlight a couple of answers with score 2 (equivalent to "agree only in part") from the Italian team of teachers about Items 32 and 35. From their point of view, the italian students increased only in part their motivation towards education, both in terms of short-term attitude during lessons, and in terms of interest in further education after graduation.
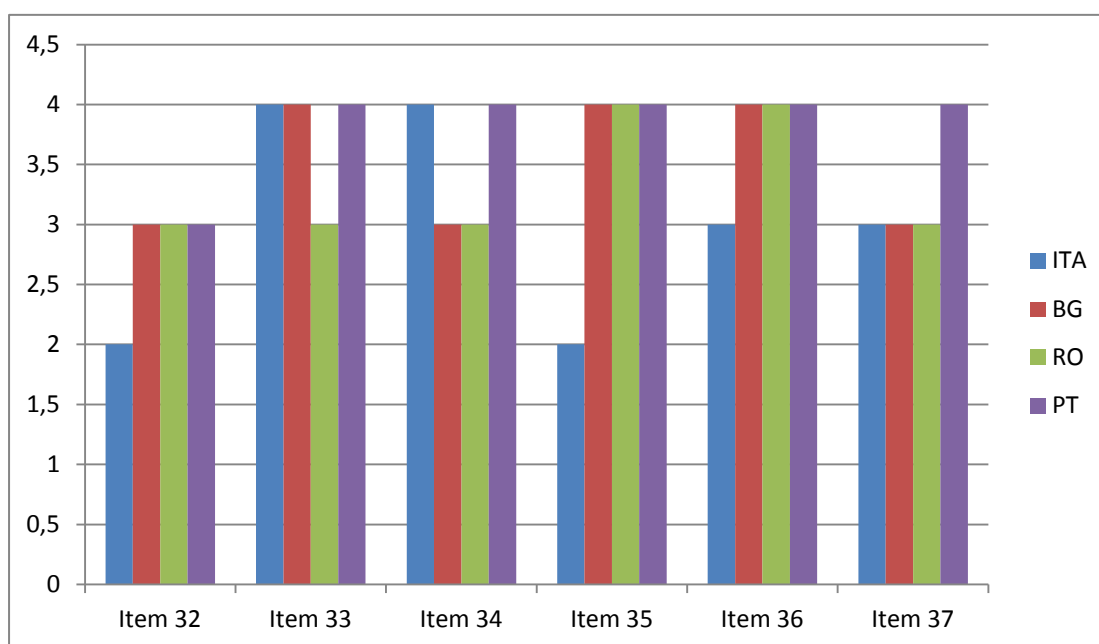
Concerning the demand for repeatability of the experimentation and its transferability outside the partnership, section 5 shows very good perspectives, as the table and graphic below show:

Item 38	The activity can be repeated the same way with other classes / students from the same study course	Average 3,75
Item 41	The activity fits also students with special needs or learning impairments	Average 2,75

Item 42	The activity can be repeated the same way with students belonging to other study courses in your school	Average 3,75
Item 43	The activity can be repeated the same way with students of different age	Average 3,75
Item 44	The activity can be delivered/ led by other teachers without particular problems	Average 4
Item 45	The activity can be addressed also to students belonging to other sectors than the industrial one	Average 4

A separate consideration is due about Item 41, about the suitability of the experimentation for learners with **special needs**. The score at 2,75 (between "only in part" and "in general"), shows that there is room for improvement in the inclusion of students with fewer opportunities (physical or psychic disability, socio-economical disadvantage, ethnical or cultural minority background). In the number of students involved in the project's experimentation activities, particularly in Italy, Romania and Bulgaria, students with disabilities or minor opportunities of different types have been involved: a first distinction can be made between minor opportunities arising from minority membership ethnic groups (represented in particular by 3 Roma pupils attending school P8 Aurel Rainu, RO) and the remaining physically handicapped (students in wheelchair) or learning difficulties (1 student with Down syndrome in Italy, 8 students with 'attention, dyslexia and variously certified as DSA). In both cases, the highly practical, experiential and participative activity of the activities has favored the overcoming of disparities between well-meaning or local ethnic majority students, tending to flatten these differences. In turn, students with disabilities or belonging to ethnic minorities responded well to this opportunity by developing greater self-confidence and ability to make an active and significant contribution to group work. As far as Output 3 is concerned, the innovative didactic methodology implemented by P3 Bocchialini (ITA) has been particularly positive: role-play, or dramatization, with the intended purpose of stimulating entrepreneurial "views" in hypervideo products by their comrades, and to "act them" in a context of theatrical simulation. The students, divided into two groups, received the mandate to devise, write and perform a short play on entrepreneurship, the one in comic style, the other in tragic terms, having as a background the history of a worker who loses his job after dismissal. The theme and methodology were chosen precisely because of the low level of "know-how and technical knowledge" needed to participate and contrary to the high level of personal and interpersonal skills,

communication skills and aptitude for the necessary group work. These components have allowed disadvantaged children and learning impairments to overcome their difficulties precisely because the task, formulated in this way, made them less obvious and especially less significant by minimizing the impact on the end result and the same impact within the peer group. All the youngsters with lesser opportunities involved responded positively to this opportunity and became fully involved in conducting experimentation, working and giving their contribution in the same way as others and, above all, experiencing a strong reduction in the gap that usually divides them from the peers and from ordinary teaching activities.

Section 5 - Transferability, generall overall data
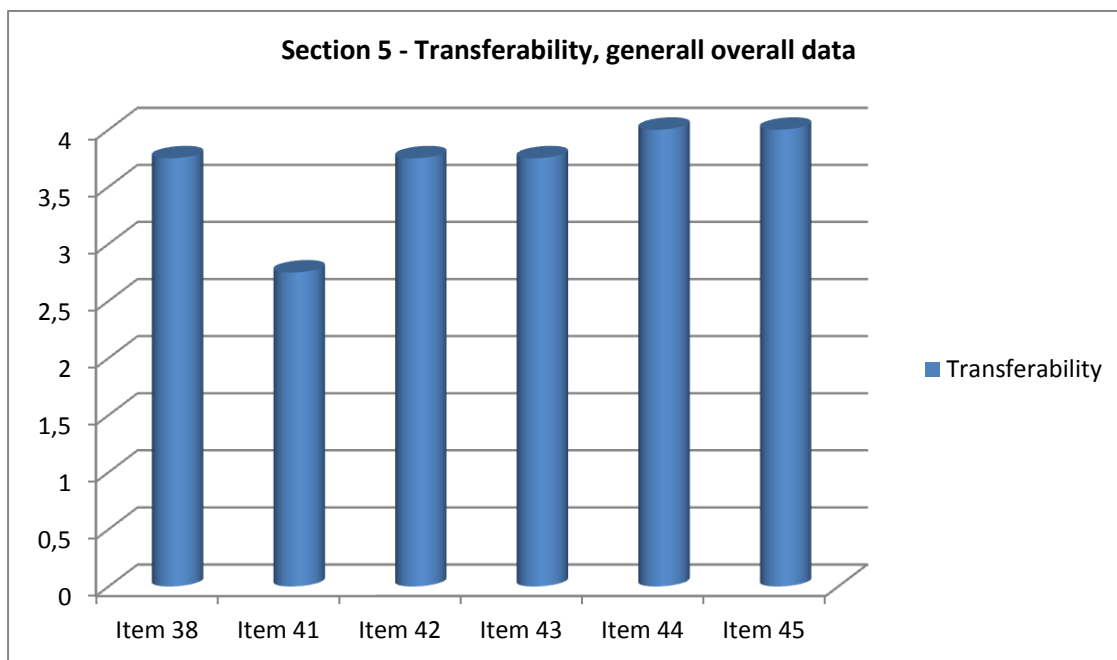
Furthermore, the four interdisciplinary teams agree about some useful criteria to increase the level of transferability of the experimentation and of the whole project to different contexts:

- Decrease purely factual contents

- Increase the interaction students/ teachers

- Increase the time for discussion / brainstorming

- Increase multimedia learning

- Increase students' teamwork

Finally, also Section 6 which is focused on detecting the criticalities, shows positive trends despite the general difficulty of organizing an experimentation on themes alien to the school program (entrepreneurship), with methodologies not envisaged by the traditional didactics (blended learning). As we expected, the item with the lowest score is the one who researches the real sustainability of the experimentation at the organizational level, as it can be seen by the chart and the graphic below.

Item 52	The activities were sustainable at organization level (committment and time required to teachers)	Average 3
Item 53	The activities in class were manageable without organizational /behavioural problems	Average 3,25
Item 54	Students took part in the activities without difficulties about the contents / topics discussed	Average 3,25
Item 55	Students took part in the activities without difficulties about the teaching methods	Average 3,25

Also in this case, the 4 team/countries agree about the possible corrective actions that may hopefully increase the didactic sustainability and effectiveness of the experimentation, for the benefit of both target groups of the project (VET teachers and students):

- Longer time for the technical/digital training for the teachers
- Longer duration of the teacher-led didactic experimentation to obtain better learning results in terms of entrepreneurial learning
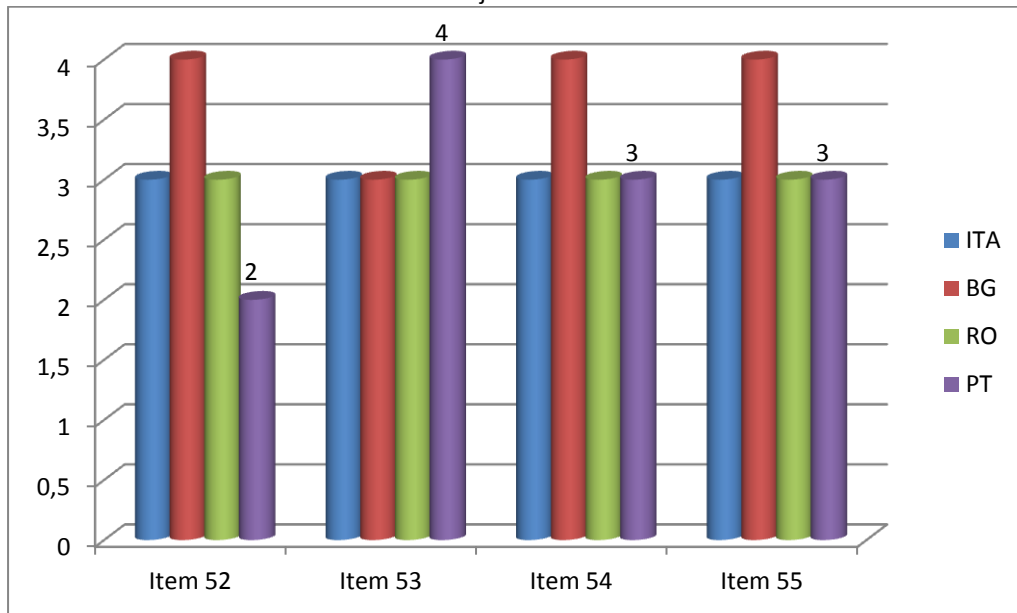
III.2 Impact & appreciation of the activities. Students' feedback

Before the deployment of the experimentations, the Coordinator and the teachers' teams identified a set of indicators useful to measure the following:

- The appreciation of the students involved in the teacher led experimentation
- The students' perception of the didactic effectiveness of the experimentation (as final target)
- The impact of the experimentation on the motivation of the students towards education
- The impact on the students involved in terms of inspiration to entrepreneurship and self-entrepreneurship
- The reproducibility and transferability of the experimentation to other students, taking into account the point of view of the students themselves

For this purpose the coordinator prepared an anonymous feedback and self-evaluation questionnaire for students (see below Appendix III), which was translated into all local languages and distributed to participants at the end of IO3 activities. Please find below some quantitative data about the real number reached:

	Boys	%	Girls	%	Total
Italy	24	65	13	35	37
Bulgaria	10	33	20	67	30
Romania	14	49	15	51	29
Portugal	24	96,5	4	3,5	28
TOTAL	72	58%	52	42%	124

Both students from the lower (first 2 years) and upper cycle (last 3 years) of secondary education were involved, leaving up to the teachers' choice about which classes to involve and/or about the composition and selection criteria of the groups of students. Students aged from 14 to 19 were recruited, with an average age of 17 according to what comes out from the table below:

	Average age of the students
Italy	17,3
Bulgaria	15,6
Romania	16,6
Portugal	18,5
Total average age	17

The questionnaire is composed of 18 overall questions, of which 17 one-choice questions and one open question asking for further suggestion and comments. Also in one-choice questions students had the chance to add a comment or explanation to their answers for each item. Questions were given in the form of statements which students were invited to declare their agreement or disagreement about, according to 4 different choices:

- Totally agree → pt. 4
- Generally agree → pt. 3
- Agree only in part → pt. 2
- Disagree → pt. 1

To obtain aggregated results for the elaboration of statistics and graphics, while processing questionnaires the Coordinator allocated to each answer the score described above. The items of the questionnaire dealt with more issues that the partnership is interested into, classified according to the following topics:

Items 1-2	Positive expectations about the experimentation
Item 3	Anxiety/ negative expectations about the experimentation
Item 4	The objective of the experimentation were clear and comprehensible
Items 5-6-7	- Impact of the experimentation on the students' school performance - Self-perception of improvement of the school advancement
Items 8-9-10-11	- Impact of the experimentation on the students' motivation - Increase in the students' interest towards education - Perception of greater effectiveness of the experimentation for learning purposes compared to the traditional teaching methodology
Items 12-13	- Perception of learning contents about entrepreneurship - Inspiration to entrepreneurship
Item 14	Evaluation of the duration of the experimentation
Items 15-16-17	- Willingness to repeat the experimentation - Willingness to advise other students to partecipate in the experimentation - Willingness to advise teachers to use hypervideos as innovative and alternative didactic tool
Item 18	Free comments

Concerning Items 1-2, the graphic below shows the overall results (all countries and all students) related to the statement "Before taking part in the project, I had positive expectations about the experimentation". Considering as aggregated together both answers "Totally agree" (pt. 4) and "Generally agree" (pt. 3), Graphic 1 shows a clear positive trend with "Yes" above 70% and "No" at 6%.
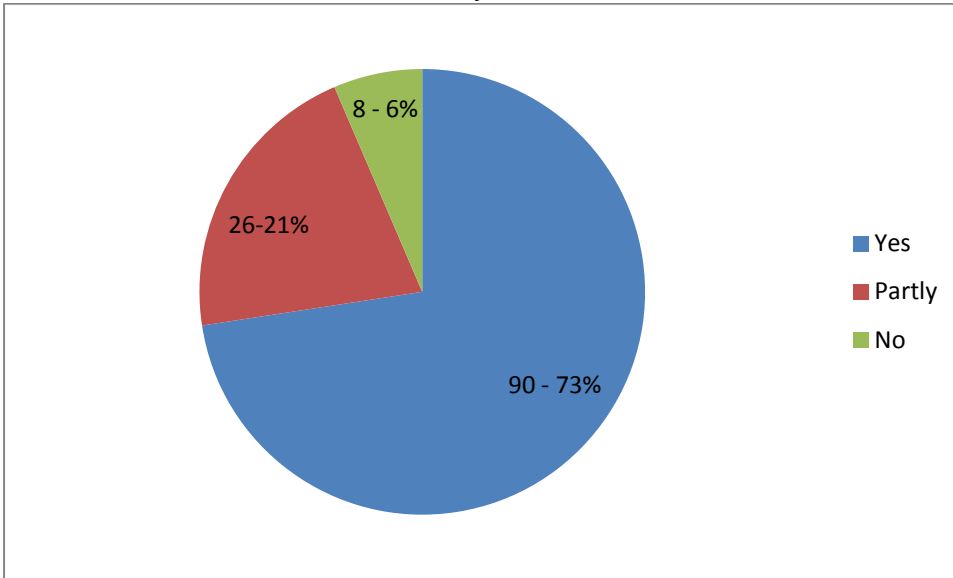
Graphic 1 – Before taking part in the experimentation, I had positive expectations about it

Considering instead Items 1-2 themselves from a "single country" perspective, there is a general positive trend (score above 3) with the only exception of the italian students setting at 2,50 average score, between "Agree only in part" and "Generally agree" (see Graphic 2).
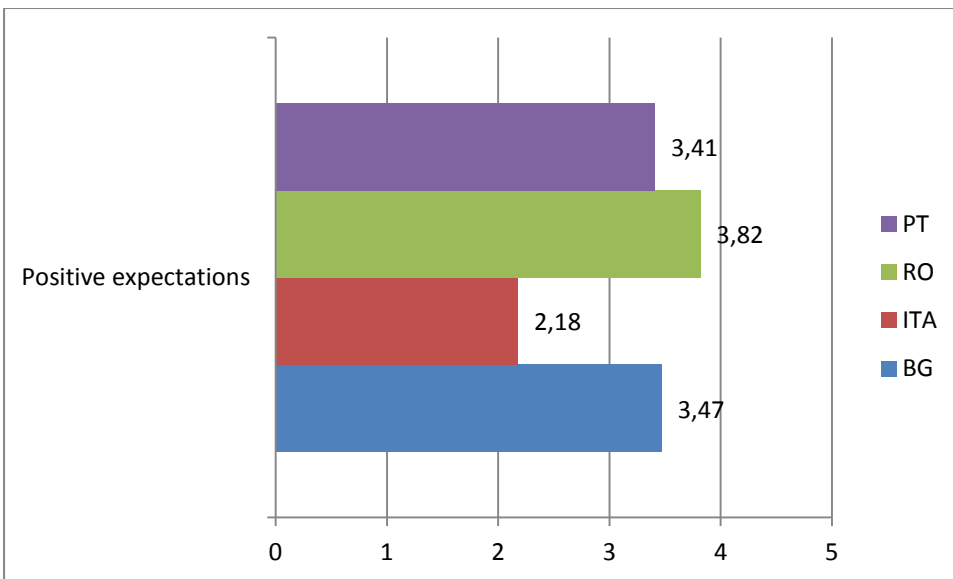

Graphic 2 – Items 1-2 aggregated for single country

At the same time, Item 3 researched the possible negative expectations of students, such as feeling nervous or anxious before taking part in the activities. Also in this case results are encouraging, with "No" at 62%, even if we cannot neglect "Yes" at 17% and "only in part" at 21%.

21 - 17%

26 - 21%

77 - 62%

- Yes
- Partly
- No
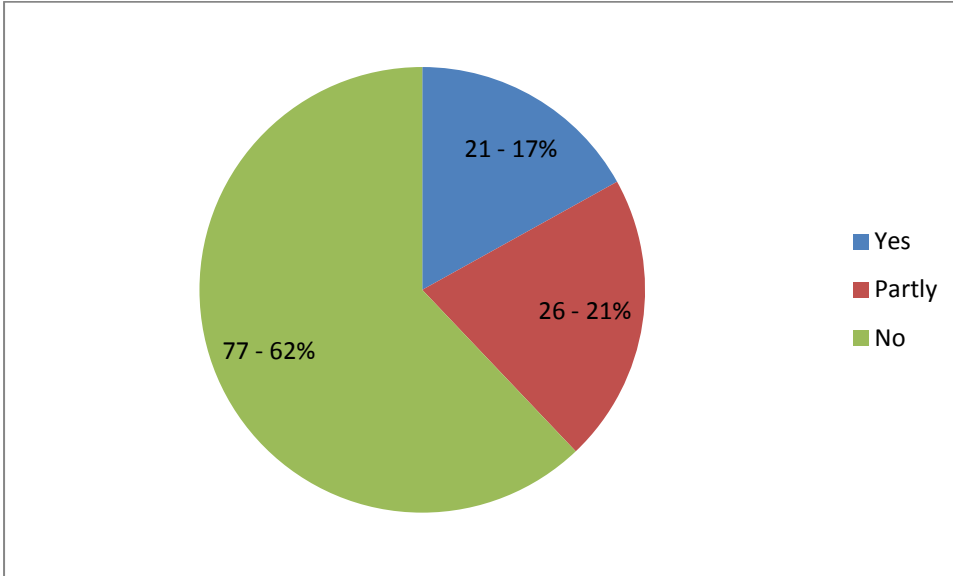
Graphic 3 – The idea of taking part in the experimentation made me nervous

Results for single countries show instead a fundamental line up among all, with a perception of anxiety/nervousness slightly higher among portuguese students.

Negative expectations

- PT
- RO
- ITA
- BG

0,00   0,50   1,00   1,50   2,00   2,50   3,00
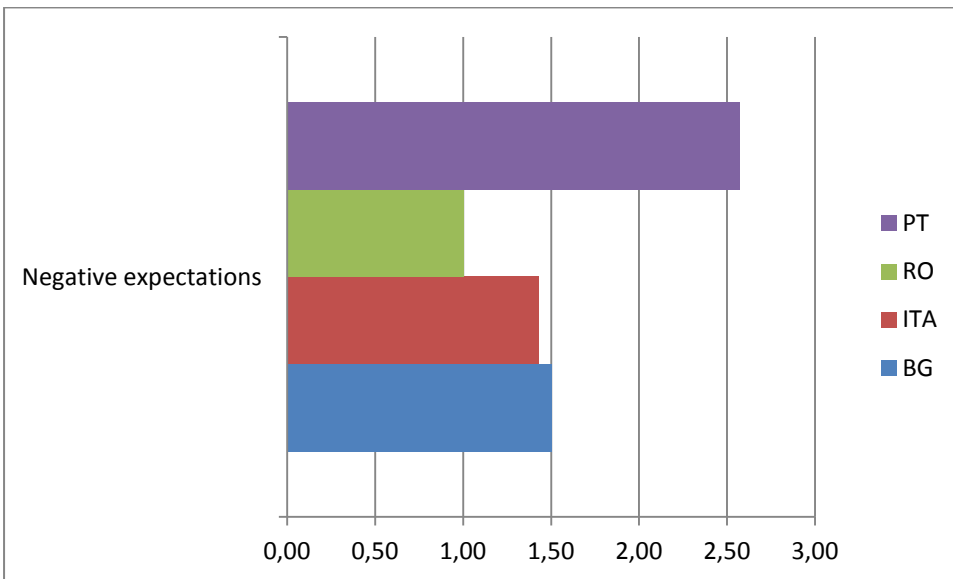
Graphic 4 – Item 3 for single country

Item 4 of the questionnaire examined instead the perception of a realistic comprehension of the objectives of the experimentation from the students' side. To the statement "Before the experimentation I had a clear understanding of the objectives of the activity itself", 65% of participants answered "Yes" (totally or generally), while 21% declared a partial

understanding and 15% declared they did not understood the objectives of the experimentation.
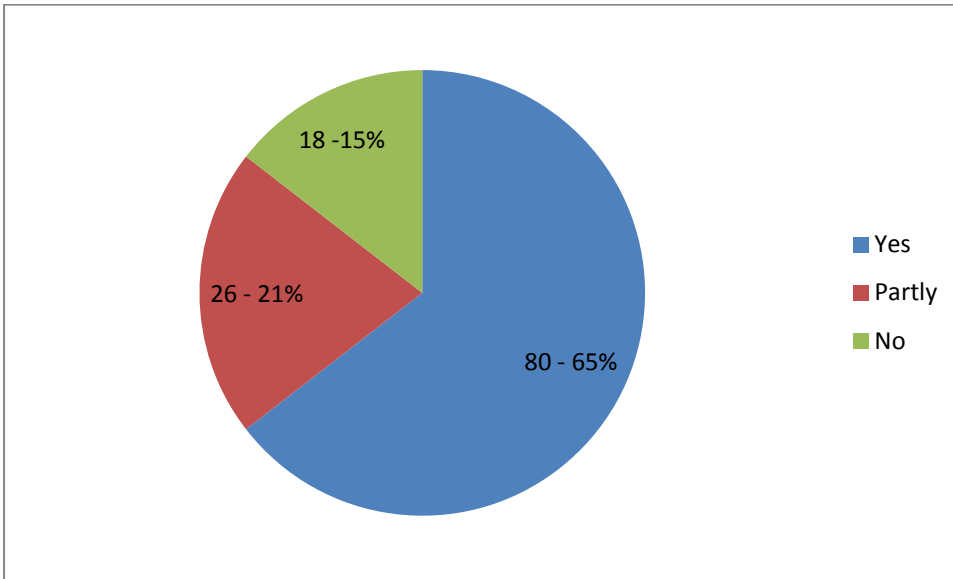
Graphic 5 – Before the experimentation I had a clear understanding of the objectives of the activity itself

The following graphic, showing results for single country, shows once again a substantial line up between eastern european countries and Portugal, while Italy holds a slightly backwards position with an average score below 2 (halfway between the outcome "I had a partial understanding of the objectives" and "I had no clear understanding at all").
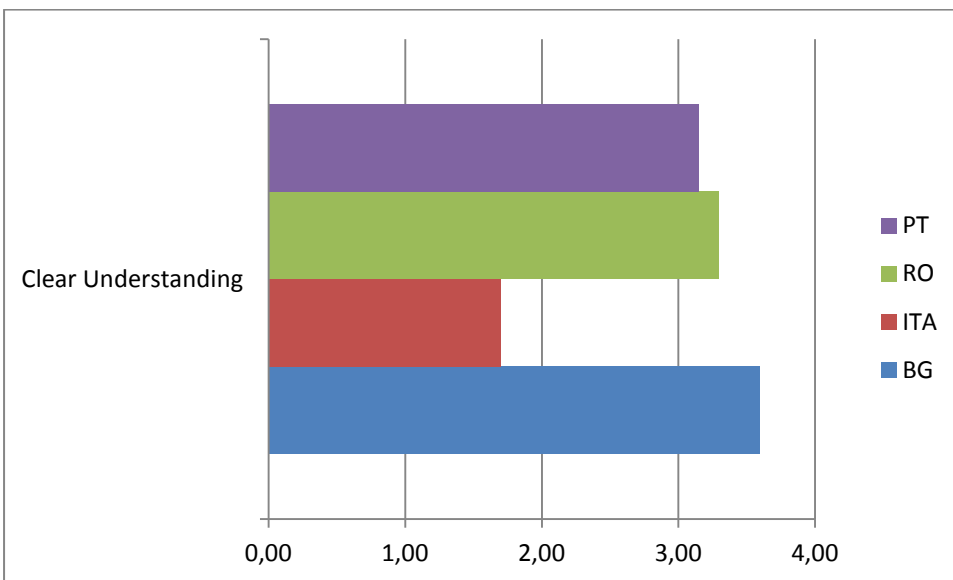
Graphic 6 – Item 4 for single country

The following graphic shows instead the aggregated results related to Items 5-6-7, all of them aimed at investigating the students' perception about the impact of the experimentation on the general school advancement. To the statement "Thanks to the experimentation I understand now a school topic I did not understand before" (item 6), or even more significantly "Thanks to the experimentation I feel my school performance are better than before" (item 7), 60% gave a positive answer, while only 17% did not feel any improvement in his/her school performances.
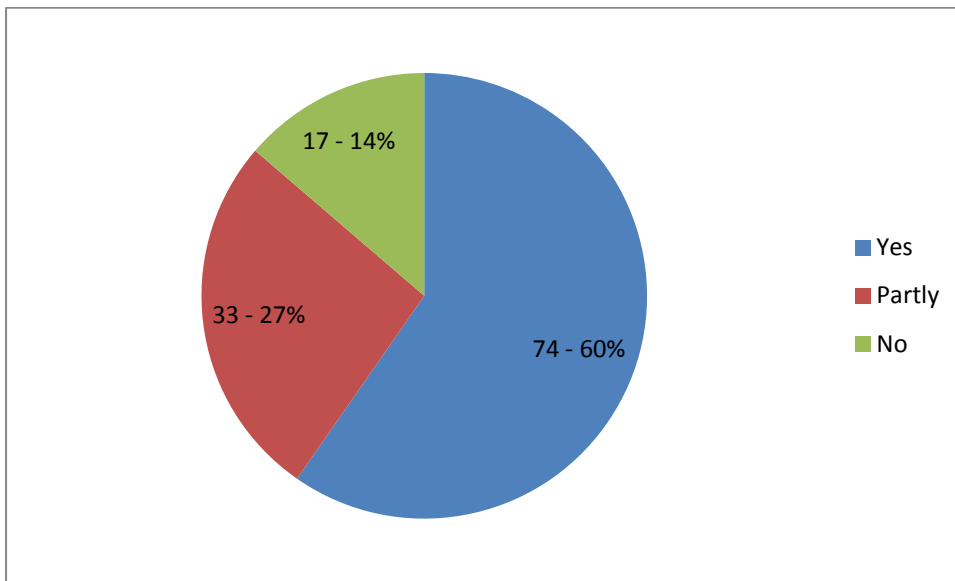
Graphic 7 – Impact of the experimentation on the individual school performances

Concerning results for each single country, Romania, Bulgaria and Portugal declare an higher level of self-perception of improvement, with a score between 3 (generally agree) and 4 (totally agree).
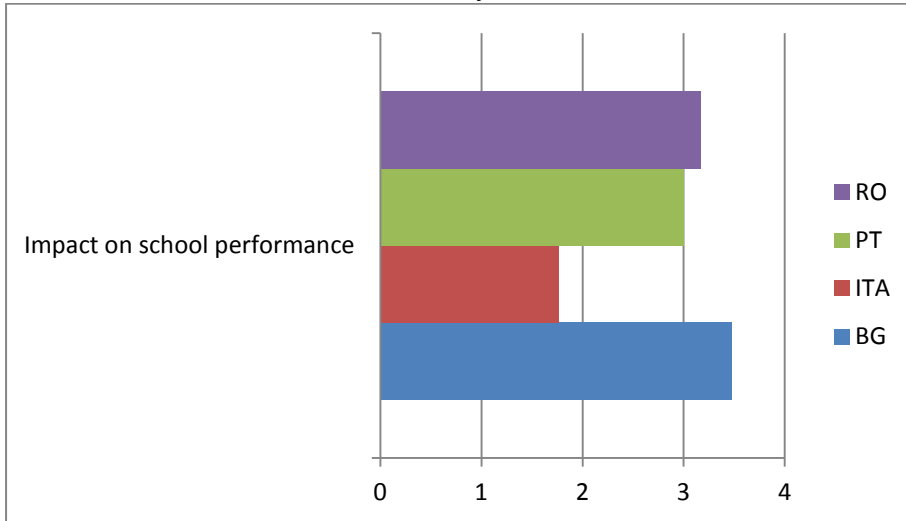
Graphic 7 – Display of Items 5-6-7 for single country

The following graphic shows the aggregated outcomes of questions from 8 to 11 included, all of them aimed at measuring the perception of greater effectiveness and usefulness of the experimentation for learning purposes compared to the traditional teaching methods, as well as the positive impact on the motivation towards education. In general scores set on a level higher than 3 (equivalent to "generally agree"), with the only exception of Italy setting on level 2 (equivalent to "partially agree").
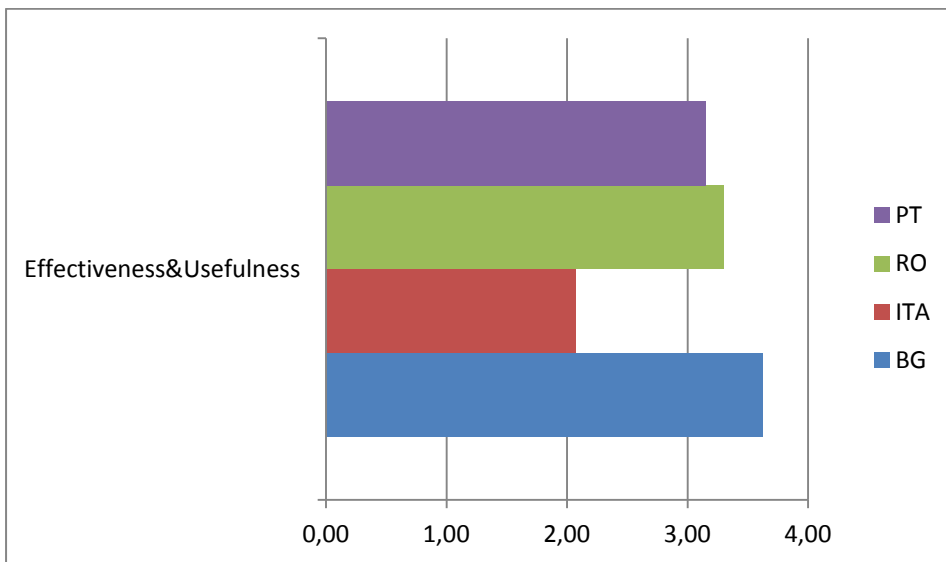
Graphic 8 – Perception of effectiveness and usefulness of the experimentation from the students' side

At this point it is interesting to investigate each single item in detail. To question 8 ("Learning with hypervideos is more useful compared to the traditional learning

methodologies"), almost 80% of students involved answered positively, while only 8% gave a negative answer:
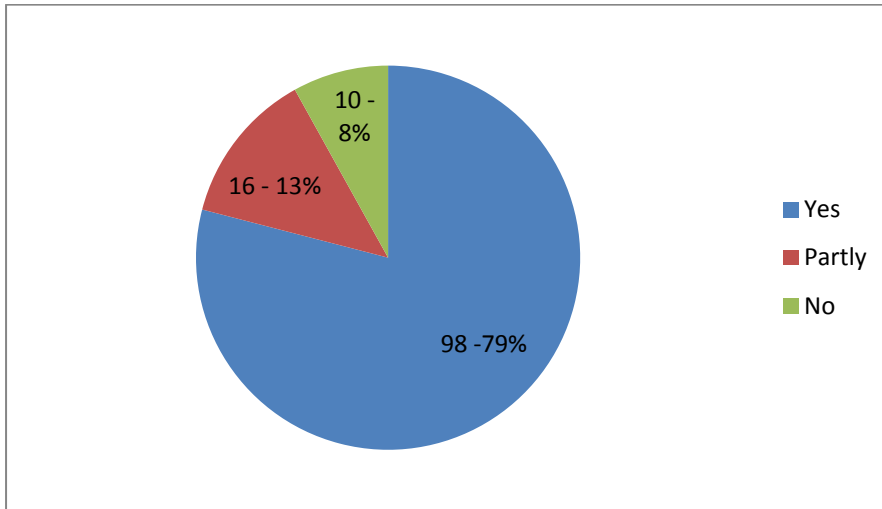
Graphic 9 – Greater usefulness of hypervideos for learning purposes compared to traditional methodology

In the same way, considering Question 10 ("Thanks to the use of hypervideos at school, my motivation and interest towards education increased"), 63% gave a positive answer, 21% answered "only in part" while 16% did not develop any increase in his/her motivation.
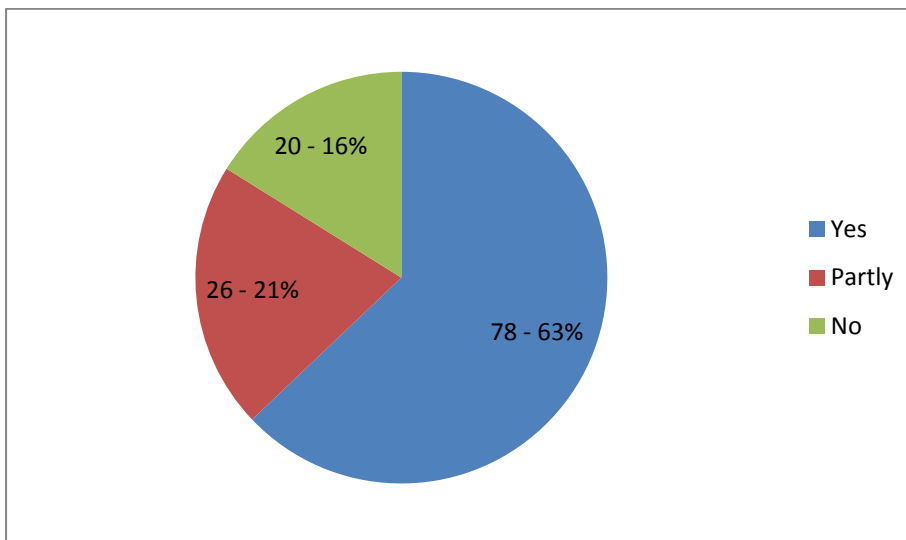
Graphic 10 – Increase of the motivation and interest towards education

Considering Item 11 the gap between "Yes" and "No" is a bit less wide. As Item 11 investigates the self-perception of the increase of the ability to make cross-curricular connection as a result of hypervideos experimentations, 59% declared they developed such

ability, 25% declared they developed it only in part, while 15% declared they did not develop it at all.
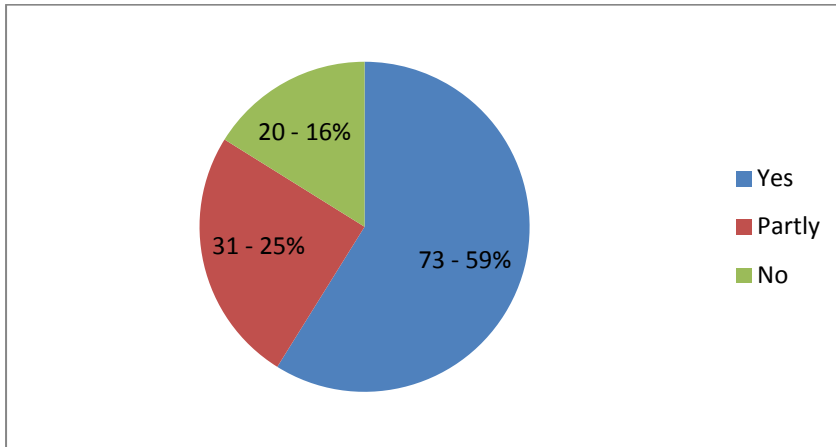
Graphic 11 – Increase of the ability to make interdisciplinary and cross-curricular connections

One of the main objectives of the experimentation, and of the entire project, is to make students learn contents about entrepreneurship, and ultimately to create the best possible paths to let young people develop entrepreneurial skills as well as an ambition to self-entrepreneurship. Item 12 of the questionnaire investigated the students' perception of learning something about entrepreneurship thanks to the hypervideo experimentation.
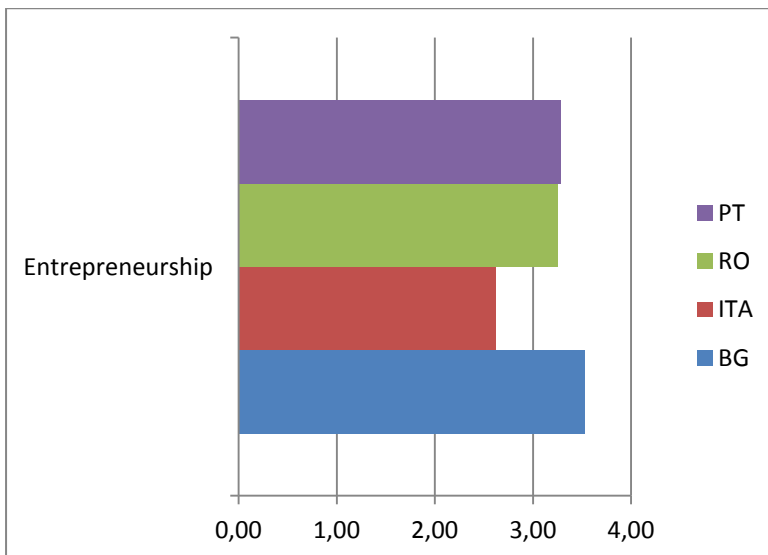
Graphic 12 – Item 12: Thanks to the experimentation I learned contents about entrepreneurship (results per country)

Encouraging results are shown by Graphic 13, with 3 countries out of 4 declaring an agreement to the statement of Item 12 above level 3. Results are even more evident and

positive according to the perspective of Item 14, about which Graphic 14 shows that

86% of students agrees with the relevant statement:
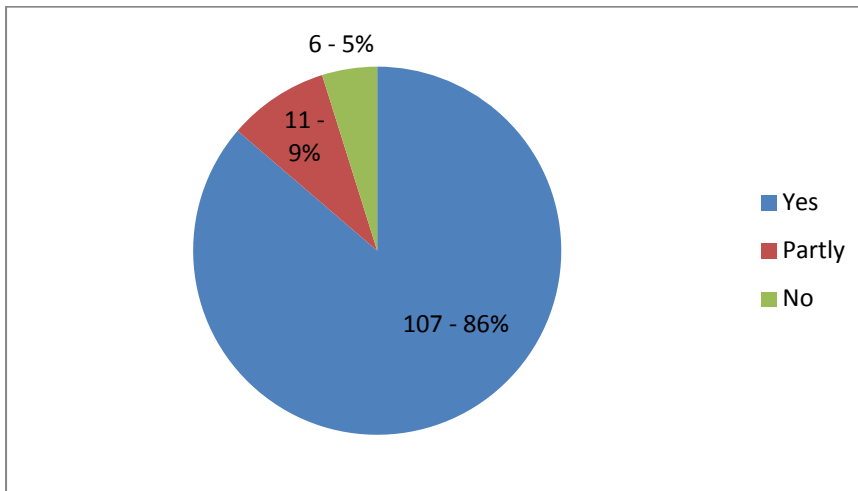
Graphic 13 - Item 12: Thanks to the experimentation I learned contents about entrepreneurship

More specific is the research of Item 13, investigating on the perception of inspiration to entrepreneurship that students should have developed thanks to the hypervideo experimentation. More than half of the students declared to receive a personal spur to become entrepreneur, while a quarter of all students declared no inspiration at all and 19% only in part.
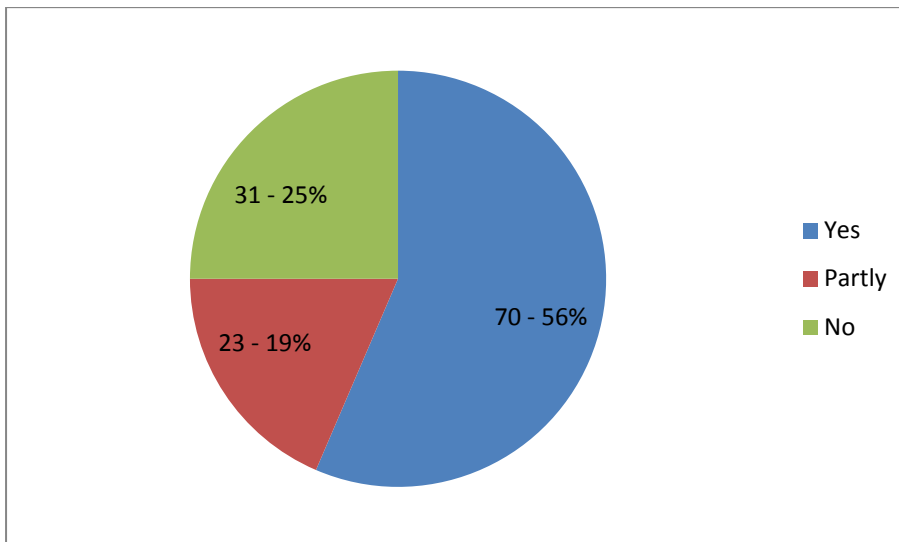

Graphic 14 – Item 13: Hypervideos inspired me to establish an entrepreneurial activity in the future

A more variable scenario is pictured by the following graphic, investigating Item 13 itself from a country perspective: the most inspired students were the Bulgarians, followed by Portugal, Romania and Italy.
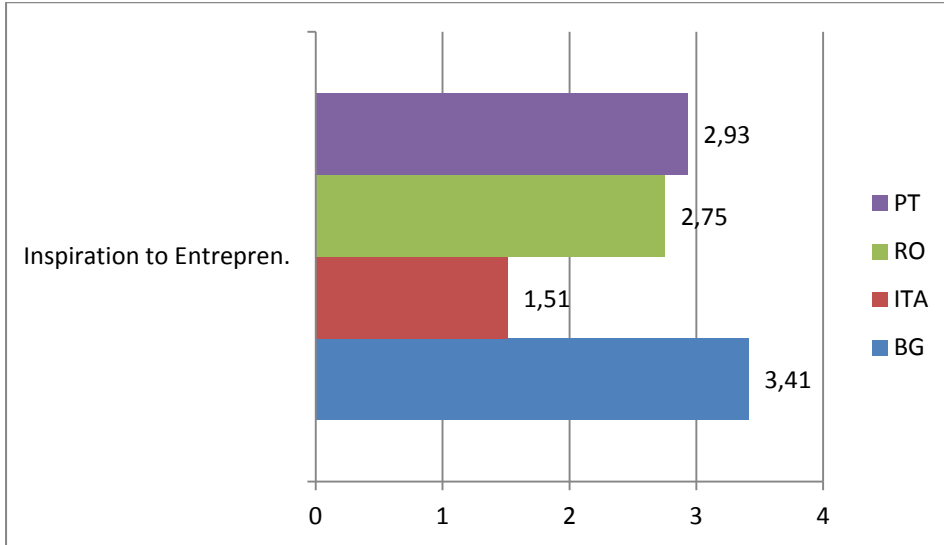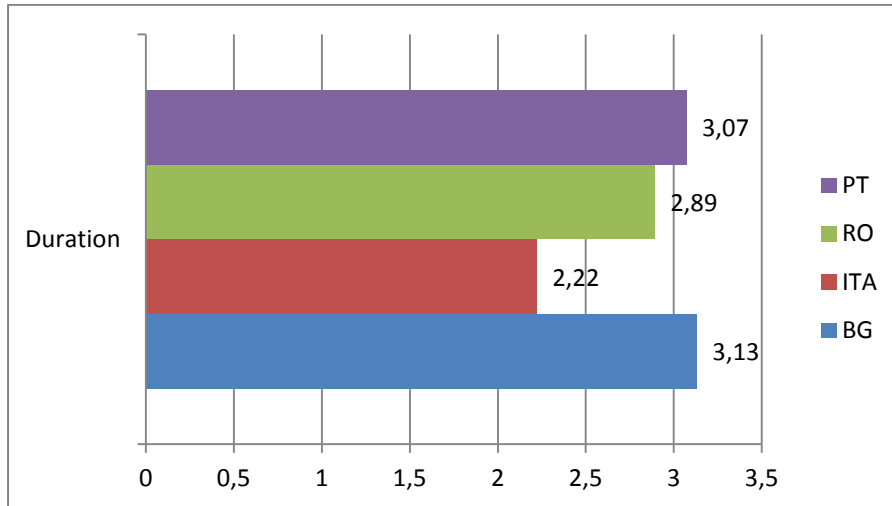

Graphic 15 – Item 13 for single country

At this point, it might be useful to make considerations about the duration of the experimentation, which varied from school to school according to the didactic organization chosen by each teachers' team (see above). Item 14 specifically investigates on the students' opinion about the time dedicated to the experimentation: for 62% time was enough for them to understand all the teaching contents, while for 30% time was just about enough and for the last 8% it was not enough at all.
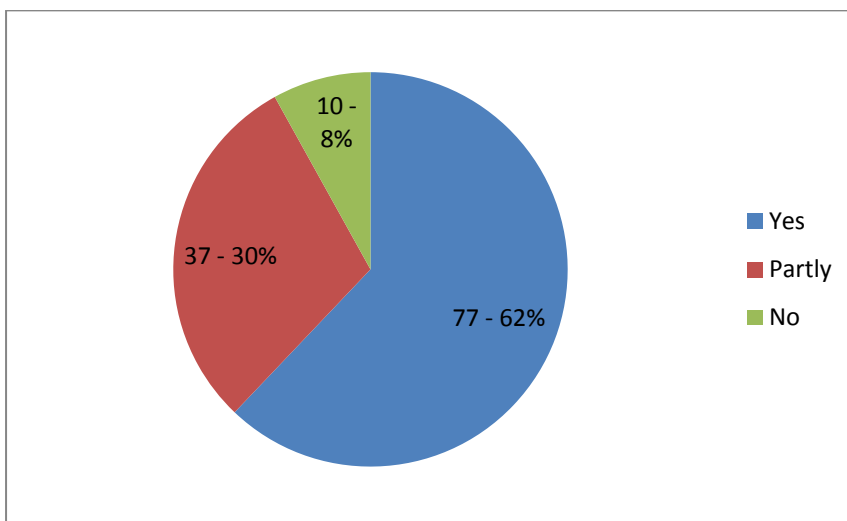

Graphic 16 – Item 14: the duration of the experimentation was enough for a thorough comprehension of contents

Even more evident the gap if we consider outcomes of Item 14 from a single country perspective (Graphic 18). Although Bulgarian students almost unanimously agreed about the appropriate duration of the experimentation, Italians scored slightly above level 2 (equivalent to "only in part").


Graphic 17 – Item 14 from a single country perspective

Finally, Items 15-16-17 investigate a very interesting and crucial topic for F.A.S.T.E.S.T. project general purposes, such as the reproducibility of the activities as well as their transferability to other contexts – again, from a students' perception perspective. The research investigated first on the willingness of the students involved to repeat the experimentation with hypervideos, possibly considering other school subjects (Item 15, "I would like to repeat the experimentation in other school disciplines"):
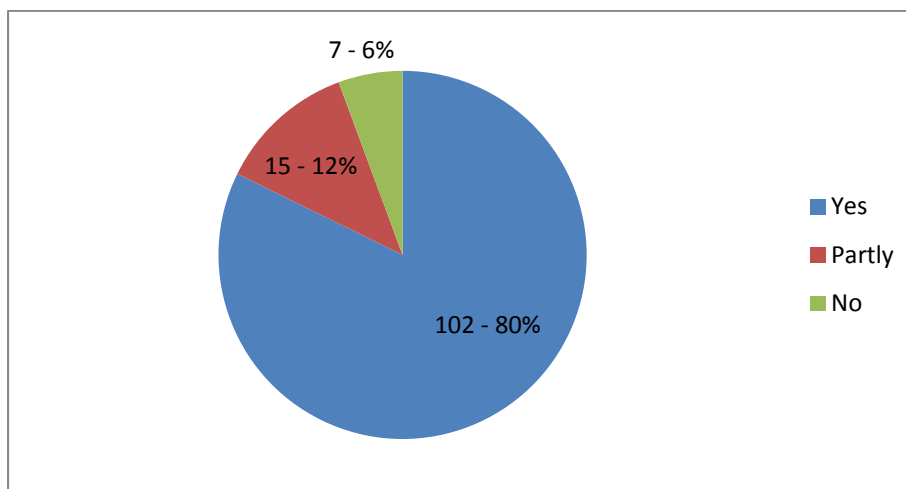

Graphic 18 – Item 15, "I would like to repeat the experimentation in other school disciplines"

According to the trend described above, Bulgaria deployed the most positive results in terms of innovation introduced thanks to the experimentation, casting its effects on the positive attitude showed by students, respectively followed by Romania, Portugal and Italy:
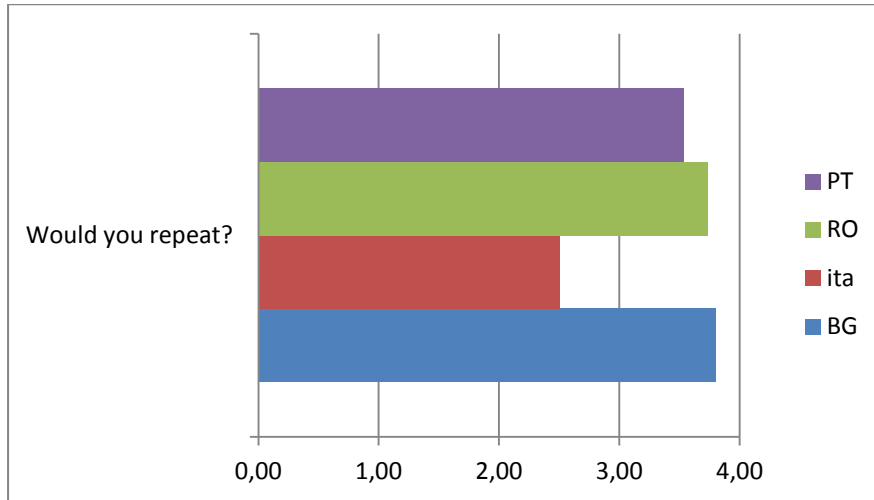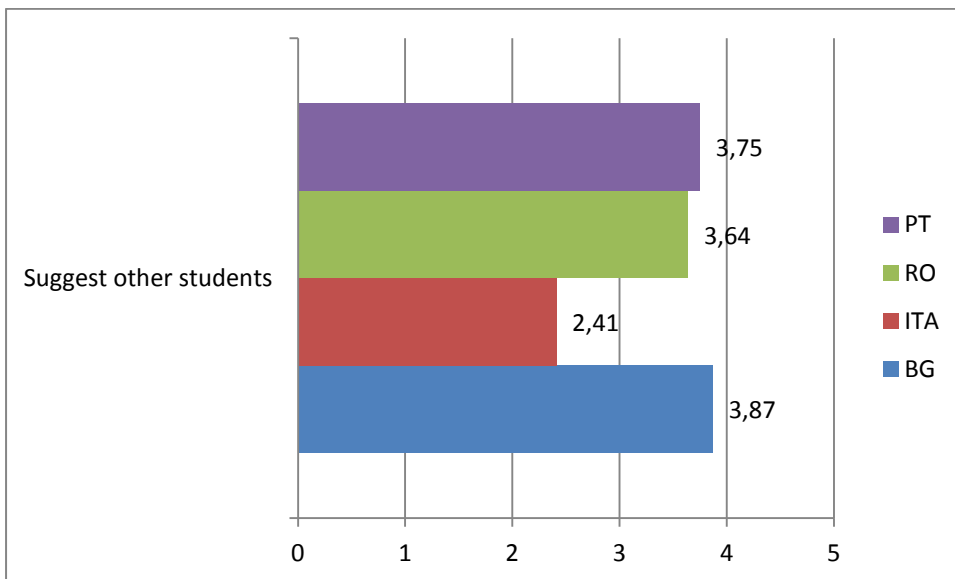

Graphic 19 – Item 15 for single country

Even more uniform is the opinion of students about their willingness to suggest other fellow students to partecipate in the same experimentation: 85% of students gave a positive ansie, while just 9% has some concerns (equivalent to score level 2 "I would recommend to go for it only in part") and the last 6% would not recommend the experience to their peers (Graphic 21). Data are particularly interesting as they trace a possible path to follow to let innovative didactic practices take off even beyond and after F.A.S.T.E.S.T. project pilot phase, with a real impact on the regular school organization, also with the ultimate purpose to transfer the experimentation to different levels of education (secondary and not secondary), and to other study courses (VET or not), or to other kind of target students. Graphic 22 pictures the trend of Item 16 for single country, showing the same mechanism working also for the previous Items.
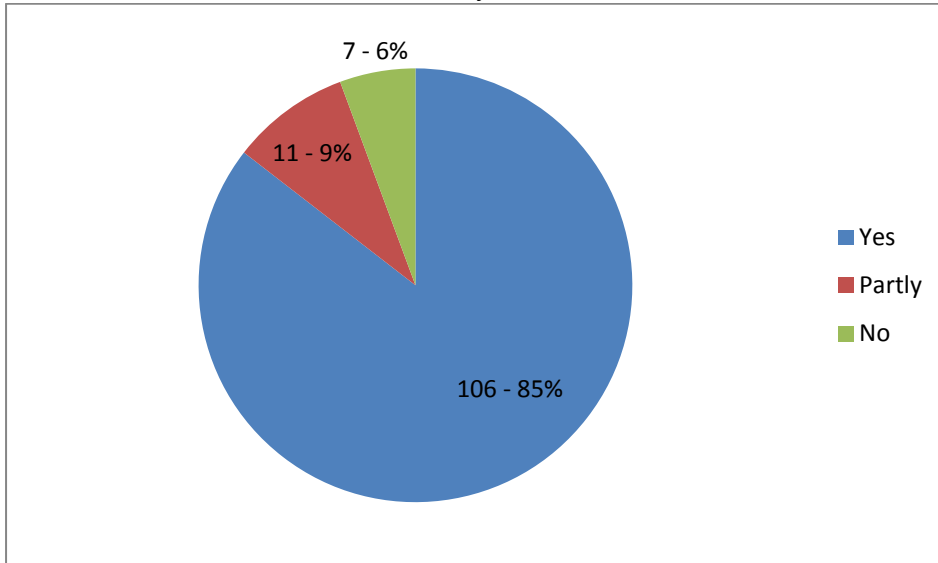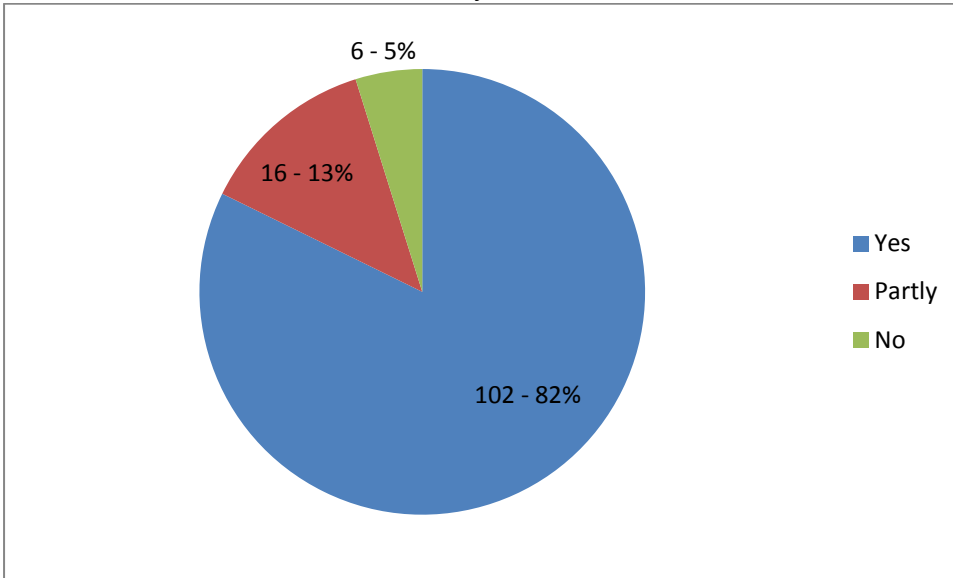
Graphic 20 – Item 16 "I would suggest other students to participate in the hypervideo experimentation"

Graphic 21 – Item 16 for single country

The last item instead researches the relationships between students and teachers and the possible paths to follow for an evolution towards a collaborative and participative didactics. To the statement "I would suggest other teachers to use hypervideos as teaching tools instead of using the traditional methodology", more than 80% of students gave a positive answer, with "Yes" rates particularly high in Romania, immediately followed by Bulgaria and Portugal, while Italy on average sets on more conservative positions.

Graphic 22 – Item 17 "I would suggest other teachers to use hypervideos as teaching tools instead of using the traditional methodology"
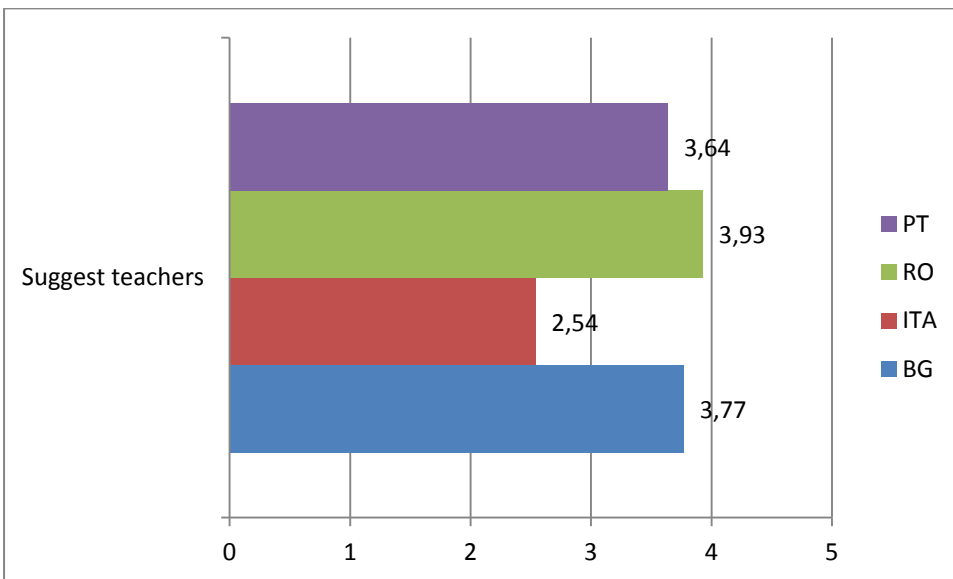
Graphic 23 – Item 17 for single country

Conclusions

As we stated previously, the official aim of Intellectual Output 3 is to test the effectiveness of *hypervideos* created in Intellectual Output 2 as didactic tool for the introduction of entrepreneurship as teaching subject at school. So it is necessary to repeat that the main purpose of creating and using hypervideos in the school/educational setting is:

- making learners familiar with the topic of the entrepreneurial skills as attitude and features of business people

- enhancing ICT skills of students and teachers thanks to digital technologies

- updating didactic skills and methodologies of teachers

- enhancing the motivation of students towards education, fighting early school leaving as well

- enhancing the employability chances for students

- last but not least, to avoid all the efforts being useless, the actual possibility of repeating and transferring what has been done during the entire project

Thanks to the project outputs, the partnership of F.A.S.T.E.S.T. intends to make its own contribution, drawing a path that, far from being fulfilled, will be able to make the greatest contribution if it is implemented as an integral part of the training curriculum of the institutes that have tested it and of the organisms that will want to adopt it as best practice.

Appendix I – IO3 Activity 1, Teaching Program about Entrepreneurship

A. Targets

2 classes/ groups: age of the students or year of study	Class / group 1: Class / group 2:
Curriculum of studies:	Class / group 1: Class / group 2:
Duration of the Entrepreneurship module for each class (hours)	Class / group 1: Class / group 2:

B. Identification of the learning objectives

Topics / Contents

1. The Skills of an Entrepreneur: which one do teachers want that students notice in the hypervideos?

Soft skills (personal/interpersonal skills/ communication skills)	*(description)*
Hard Skills (knowledge, technical expertise...)	*(description)*
What else?	*(description)*

2. Connections with the curricular subjects at school (humanities, science, economics...): which ones can be found in the hypervideos?

Humanities	*Description of connections with entrepreneurship*
Math & Science	*Description of connections with entrepreneurship*
Law & Economics	*Description of connections with entrepreneurship*
Vocational Subjects	*Description of connections with entrepreneurship*

C. Modality

Frontal Lessons	Interactive Lessons	Individual Learning at home (Students)
Teachers introduces topics about...?	*Teachers & students watch the hypervideos and discuss Questions to/from students Browsing the web links ...?*	*In groups?* *Alone?* *Visiting the hypervideo links?* *Researching more information both offline & Online?*

D.Program

Lesson 1	Teacher: Mr /Mrs… Goals: … Modality:… Contents: …. Exercises / tasks for students:… Evaluation / outcome:…. Comments:….
Lesson 2	
Lesson 3	
Lesson 4	
Lesson 5	
Lesson 6	
Lesson 7	
Lesson 8	
…	

APPENDIX II - TEACHER'S MONITORING & FEEDBACK QUESTIONNAIRE

You can answer as a team of teachers (at least 1 questionnaire for each country)

Topic of investigation: IO3 – Using Hypervideos As Teaching Tools

Section 1. Organizational Issues						
	Statement	*Do you agree with this statement?*				*Please add your comments*
		Yes-totally	*Yes-generally*	*Only in part*	*No*	
1	The organization of the experimentation was effective for the successful implementation of the activity					
2	There were no obstacles in integrating the project's activity with the normal school activity					
3	I t was easy to find colleagues who accepted to take part in the experimentation					
4	It was easy to decide which students /classes to involve in the experimentation					
5	The number of hours was appropriate for the experimentation					
	Please select one or more choices:					*Please add your comments*
6	The activity was: *(only one choice possible)*	□Curricular / compulsory		□Extracurricular / optional		
7	Special needs students were involved	□Yes		□No		*How many?*
8	Training methods used and relevant percentage on the total *(more choices possible)*	□Frontal Lessons …% □Interactive Lessons …% □Individual Study …% □Group activity …% □Other *(indicate)* …%				

Sez. 2 Contents & Learning Objectives						
	Statement	*Do you agree with this statement?*				*Please add your comments*
		Yes-totally	*Yes-generally*	*Only in part*	*No*	
9	The teaching program was delivered as it was originally planned					
10	The choice of the teaching contents fitted the target students involved in the activity					
11	The Learning Objectives were reached as it was originally planned					
12	The topic of Entrepreneurship was given proper value					
	Please select one or more choices:					*Please add your comments*
13	Which features of Entrepreneurship / of the Entrepreneur were treated? *(more choices possible)*	□Personal qualities □Relational / Interpersonal skills □Communication Skills □Technical Knowledge □Practical experience □Other (indicate)				
14	Which feature of entrepreneurship was given more value and in which percentage? *(only one choice possible)*	□Personal / Behavioural skills (soft skills) ...% □Technical skills (hard skills) …%				
15	If the teaching program was changed, which modifications were made? *(more choices possible)*	□Teaching Contents □Didactic approach (choice among frontal/ interactive lessons, team work..)				

		□Duration of the experimentation □Target students selected for the experimentation □Other *(indicate)*			
16	Most treated topics during the experimentation *(please put in order from 1 –most treated to 3- less treated)*	… Entrepreneurship … Agroindustrial topics …IT / Digital & Informatics skills			
17	To which school disciplines was given priority? *(more choices possible)*	□Humanities (incl. foreign language, history & geography) □Math & Science □Law & Economics □Agroindustrial VET school subjects			

Section 3. Measuring the learning outcomes

	Statement	*Do you agree with this statement?*				*Please add your comments*
		Yes-totally	*Yes-generally*	*Only in part*	*No*	
18	The activity had the expected impact on the students					
19	Generally the students received a positive evaluation / mark about the experimentation					
20	Thanks to the experimentation, the students learned topics/contents that they didn't know before					
21	Thanks to the experimentation the students learned topics/contents about entrepreneurship [FASTEST project topic]					
22	Thanks to the experimentation the students learned topics/contents about the agroindustrial sector [FASTEST project topic]					
23	Thanks to the experimentation the students learned topics/contents about IT and digital tools [FASTEST project topic]					

	Please select one or more choices:					*Please add your comments*
24	Generally the students increased their knowledge about the following school subjects: *(more choices possible)*	□Humanities (incl. Foreign languages, history, geography) □Math & Science □ Law & Economics				
25	Indicate the entrepreneurial traits that students generally understood *(more choices possible)*	□Personal qualities □Communication Skills □Interpersonal qualities □Problem Solving □Leadership □Technical skills □Other (indicate)				
26	Indicate the percentage of positive /negative evaluations on the total of the students	Positive Evaluations ….% Negative Evaluations …%				
27	Which evaluation tools/methods have been used to measure the students' learning outcomes? *(more choices possible)*	□Individual written tests □Teamworks □Oral tests □Presentations in front of the class □ Other (indicate)				Please attach didactic materials and/ or students' products/outputs to show some examples of the class activities (in your language)

Section 4 - Appreciation and perceived didactic effectiveness

	Statement	*Do you agree with this statement?*				*Please add your comments*
		Yes-totally	*Yes-generally*	*Only in part*	*No*	
28	Students showed a positive attitude before					

	Statement	Yes-totally	Yes-generally	Only in part	No	Please add your comments
	starting the project's activities					
29	Students were skeptical before starting the project's activities					
30	Students took part in the activities with curiosity and interest towards the activities					
31	Students were enthusiastic and satisfied at the end of the experimentation					
32	Students' attitude towards education and school improved after the experimentation					
33	During the experimentation students were more open to the learning process compared to the traditional lessons					
34	During the experimentation students were more ready to make connections among the different school subjects compared to the traditional lessons					
35	Thanks to experimentation students developed/increate their interest to further education					
36	Students developed curiosity and interest for the topic of entrepreneurship					
37	Students showed interest to undertake a self-entrepreneurial career path in the future					

Section 5 - Transferability

	Statement	Do you agree with this statement?				Please add your comments
		Yes-totally	Yes-generally	Only in part	No	
38	The activity can be repeated the same way with other classes / students from the same study course					
39	The activity fitted the age of the target students					
40	The activity fitted the cultural preparation of the target students					
41	The activity fits also students with special needs or learning impairments					
42	The activity can be repeated the same way with students belonging to other study courses in your school					
43	The activity can be repeated the same way with students of different age					
44	The activity can be delivered/ led by other teachers without particular problems					
45	The activity can be addressed also to students belonging to other sectors than the industrial one					
46	It is possible to evaluate the learning outcomes of the activities with the same criteria of the normal didactic school activities					
47	If it is not possible, please describe which evaluation criteria it is necessary to adopt to assign a mark/ evaluation / score to the students					

	Please select one or more choices:		Please add your comments
48	To make the activities transferable, it is necessary to make the following changes to the	□Increase the teaching contents □Decrease/simplify the teaching contents	

	contents: *(more choices possible)*	□Focus on the historic/economic /geographic context □Increase the agroindustrial contents □Increase the contents about entrepreneurship □Focus on entrepreneurial soft skills □ Focus on entrepreneurial hard skills		
49	To make the activities transferable, it is necessary to make the following changes to the **duration**: *(only one choice possible)*	□Increase the duration □ Decrease the duration □No change needed		
50	To make the activities transferable, it is necessary to make the following changes to the **training methods**: *(more choices possible)*	□Increase the frontal lessons □ Increase the frontal lessons □Increase the interaction students/ teachers □ Increase the time for discussion / brainstorming □Increase multimedia learning □Increase students' teamwork □Decrease students' teamwork □Increase individual learning □ Decrease individual learning		
51	Please summarize the essential **criteria** for the **reproducibility** of the **experimentation**, **stating the number of hours and the percentage** for each of the following indicators:	a. Indicate the ideal overall number of hours: …. b. Frontal lessons: % c. Multimedia learning: % d. Class debate /discussion / brainstorming:% e. Students' teamwork: % f. Individual study: % g. Time focusing on agroindustrial topics: % h. Time focusing on entrepreneurship: % i. Time for other didactic contents: %		

Section 6 - Criticalities and Improvement areas

	Statement	*Do you agree with this statement?*				*Please add your comments*
		Yes-totally	*Yes-generally*	*Only in part*	*No*	
52	The activities were sustainable at organization level (committment and time required to teachers)					
53	The activities in class were manageable without organizational /behavioural problems					
54	Students took part in the activities without difficulties about the contents / topics discussed					
55	Students took part in the activities without difficulties about the teaching methods					
56	Considerations of the Team of teachers about problems or general remarks / comments about the areas of improvement					

APPENDIX III - STUDENTS' FEEDBACK & SELF-EVALUATION ANONYMOUS QUESTIONNAIRE

Please distribute the questionnaire to each student taking part in the experimentations

AGE OF THE STUDENT: Gender: □M   □F

	Statement	Do you agree with this statement?				Why? / What?
		Yes-totally	Yes-generally	Only in part	No	
1	Before taking part in the project, I had positive expectations about the experimentation					
2	The idea of taking part in the experimentation made me feel excited					
3	The idea of taking part in the experimentation made me feel anxious					
4	Before taking part in the project, I had a clear understanding of the objectives of the activity					
5	Thanks to the project's experimentation now I have a better understanding of the agroindustrial subjects					
6	Thanks to the project's experimentation now I understand a school topic that I didn't understand before					
7	Thanks to the Hypervideos experimentation I feel that my school performances are better than before					
8	Learning with the Hypervideos is more useful than the traditional teaching methods					
9	Making/Using Hypervideos at school is an effective & practical method to learn study contents					
10	Making/Using Hypervideos at school increased my interest and motivation towards education					
11	Thanks to the Hypervideos experimentation now I can make connections among different school subjects					
12	Thanks to the Hypervideos experimentation I've learned something about entrepreneurship					
13	The Hypervideos experimentation inspired me to establish my own business in the future					
14	The duration of the Hypervideos experimentation was enough for me to understand all the topics & contents					
15	I would like to repeat the Hypervideos experimentation in other school subjects					
16	I would suggest other students to participate in the Hypervideos experimentation at school					
17	I would suggest other teachers to use Hypervideos to teach the school subjects instead of using the traditional methods					
18	Suggestions to improve the Hypervideo experimentations (technology, organization, contents, topics…)					