

CONNECT

**Inclusive open schooling
with engaging and
future-oriented science**

D5.2

Initial Report on
implementing
partnership with
coach

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D5.2

Initial Report on implementing partnership with coach

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LIST OF ACRONYMS

APC	ASSOCIACAO PARANAENSE DE CULTURA APC (BR)
CPD	CONTINUING PROFESSIONAL DEVELOPMENT
ICF	INTERNATIONAL COACHING FEDERATION
IRSI	FUNDACIO PRIVADA INSTITUT DE RECERCA DE LA SIDA-CAIXA (ES)
MS	MASTERY SCIENCE LTD (UK)
NUTES-UFRJ	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO, INSTITUTO NUTES DE EDUCAÇÃO EM CIÊNCIAS E SAÚDE (BR)
OU	OPEN UNIVERSITY (UK)
RA-UFSC	UNIVERSIDADE FEDERAL DE SANTA CATARINA (BR)
RDE	PERIFERIAKI DIEFTHINSI PROTOVATHMIAS KAI DEFTEROVATHMIAS EKPAIDEFSIS KRITIS (GR)
SECAD	SECAD PARTNERSHIP CLG
UAB	USER ADVISORY BOARD
UNEB	UNIVERSIDADE DO ESTADO DA BAHIA (BR)
VUT	UNIVERSITATEA VALAHIA TARGOVISTE (RO)





Executive summary

This report describes the results obtained throughout the implementation process that took place within the Connect project, during the first year.

During this year, there have been carried out preparatory activities for the achievement of tools and materials, which were subsequently tested during piloting. The results obtained are important because it will be used to refine the tools and materials necessary for the large-scale implementation scheduled in the coming year.

The implementation process involved activities carried out in different stages:

1. development of teaching materials
2. engagement of stakeholders in open schooling
3. building educational partnerships around schools by involving various stakeholders: researchers, parents, industry representatives, school headmasters, policy makers etc.
4. implementation of learning units (Science actions) and
5. evaluation of the results of these activities.

In addition, the teachers who participated in the implementation were trained to use the tools and materials developed within the project, by coaching sessions.

The project goal for the implementation process in the first year was to support Science-actions for 1200 students in 20 schools, with the help of 20 science professionals, in 5 partner countries. A secondary objective was for 75% of the schools and science professionals to want to continue their involvement, in the next year.





1. Introduction

Connect is a 36-months project and is organized into 8 work packages. Work Package 5 – “Partnerships with coach” has a central role in building educational partnerships to implement scientific actions in the classroom.

The implementation process is supported by the activities carried out in the other work packages:

- *WP1 Communication & impact* - has the role of maximizing the impact of the project through communications with a wide audience
- *WP2 Sustainable Engagement* - develops and implements strategies for involving stakeholders in open schooling
- *WP3 Multi-Actor Platform* - provides an essential tool for large-scale implementation: Connect platform
- *WP4 Resources for all* - provides resources for both formal and informal education
- *WP6 Monitored Evaluation* - provides reflective assessment tools for both students and teachers
- *WP7 Coordination & Management* - ensures that the project will provide the expected results within the budget and on time
- *WP8 Ethics requirements* - sets the rules of ethics that are applied in the project.

The project activities are carried out in three stages: the first stage corresponds to the first year and involves a sub-stage of preparation (development of the necessary tools and materials), after which the piloting takes place in 5 countries. In the second year, considering the experience from the previous stage, the implementation will be done with a target number of 15,000 students. In the third year, the Connect implementation model will be expanded, targeting 31,500 students.

By carrying out the engagement activities in the Connect project, the teachers and schools, that were interested in implementing the proposed scientific actions, were identified. The next step was to create school partnerships to facilitate the implementation of scientific actions. Teachers who expressed their interest to implement were supported through a coaching program. Various assessment tools were applied before the start of the activities and after their completion.





2. Educational partnerships

In the context of postmodern approaches in education and training, the term “educational partnership” has acquired new meanings, determined, on one hand, by the multiplication of social factors directly or indirectly interested in the life and activity of school institutions and, on another hand, by social awareness of the need for collaboration between the school and other educational agents, for the benefit of students.

According to (Vrășmaș, 2008) "the educational partnership takes place permanently and together with the educational act itself", having "the principle of value in pedagogy" and in education in general.

Within the CONNECT Project, the partnership was designed to regulate the relations of collaboration between the CONNECT consortium, represented by the institutions with the role of national coordinator and the pre-university education institutions, as formal / official representatives of teachers, students and, by extension, their parents. The model of Partnership Agreement, agreed within the CONNECT project, includes the following structural aspects:

1. Identification data of the partner institutions.
2. What is CONNECT and what is it aimed at?
3. What does CONNECT offer?
4. What will the school and teachers obtain from CONNECT and what will they be requested?
5. Clauses of the agreement.
6. Period covered by the agreement.
7. Final provisions.
8. Signatures of the legal representatives of the partner institutions.

The partnership agreement, designed as presented above, provides a comprehensive picture of the activities that will take place in this context, of the objectives pursued and of the responsibilities of each partner.

The Cooperation Agreement provides an officially regulated context for the development of activities within the CONNECT project, especially those aimed at coaching, the actual implementation of Science Actions (through formal and non-formal activities), as well as the evaluation of activities.

For the configuration of an overall perspective on educational partnerships, below there are presented the data regarding how this activity was carried out, data collected in each country (UK, Spain, Greece, and Romania), in accordance with the feedback offered by each partner in the CONNECT project.





It should be noted that, so far, no data have been reported by Brazil. Due to the problems caused by the pandemic context, piloting activities in Brazil will end in November 2021.

2.1 Established partnerships

In total, 39 partnerships have been initiated within the Connect project. The number of partnerships in each country is presented in Table 1. It should be noted that out of the total of 39 partnerships, only 34 were already active, the others will carry out implementation activities starting this fall.

Table 1. Number of established partnerships

Country	Partnerships in first year
UK	6
Spain	6
Greece	14
Romania	13
Brazil	-
Total	39

The *Open University* (OU), UK, established partnerships with *Universidade Federal do Rio de Janeiro*, *Instituto Nutes Education Science and Health* (NUTES-UFRJ), involving 2 scientists, and 1 secondary schools. The head of NUTES-UFRJ is also member of the *User Advisory Board* (UAB) and is participating in all meetings. In addition, the OU established partnership with the network of teachers of *Universidade Federal de Santa Catarina* (RA-UFSC), including 4 schools and 3 scientists. They also engaged one school part of SECAD network and engaged a large number of teachers interested in open schooling.

In Spain, each partnership was established with scientists, institutions in "Escoles Sentinella" project and 6 primary/secondary schools around Catalonia, which are presented in the table below.

Table 2. List of piloting schools in Spain

No.	School name
1	Collegi Lestonnac
2	INS Antoni Pous i Argila
3	Escola Madrenc
4	Escola Campclar
5	Institut Consell de Cent
6	L'Escorial





In Greece, from 14 Connect partnerships, 12 concluded the implementation phase of the pilot. The list of schools that agreed to establish an educational partnership in Greece is presented in the table below.

Table 3. List of schools in Greece

No.	School name
1	High School of Neapolis
2	High School of Limenos Hersonisou
3	Model High School of Heraklion
4	1st Vocational High School of Arkalochori
5	Model Junior High School of Heraklion
6	11th General High School of Heraklion
7	Kounoupidiana High School
8	4th General High School of Heraklion
9	Junnior High School of Tefeli
10	High school of Alikianos
11	High school of Akrotiri
12	High school of Gouves
13	1st High School of Ierapetra
14	High School of Kolymvari

In Romania, from 13 Connect Partnerships, 10 became operational (active) involving 10 secondary education institutions from 3 Romanian Counties (Dâmbovița, Prahova and Bacău). The list of piloting schools in Romania is presented in table below.

Table 4. List of piloting schools in Romania

No.	School name
1	“Mihai Viteazul” Gymnasium School, Târgoviște, Dâmbovița County
2	Gymnasium School No. 1, Balcani, Bacău County
3	Frumoasa High School, Bacău County
4	Mănești High School, Dâmbovița County
5	“Aurel Vlaicu” Theoretical High School, Breaza, Prahova County
6	Economic College “Virgil Madgearu”, Ploiești, Prahova County
7	Forestier High School, Câmpina, Prahova County
8	“Voievodul Mircea” High School, Târgoviște, Dâmbovița County
9	“Spiru Haret” UCECOM Technological High School, Ploiești, Prahova County
10	“Anghel Saligny” Technological High School, Bacău, Bacău County





2.2 Activities carried out by the established partnerships

In UK, all the OU meetings were held online. First to present the project, second for planning the coaching and third to provide a workshop engaging students, scientists, and teachers to discuss opportunities and possibilities. There were 4 coaches involved, three from each organisation and 1 from the OU.

In Spain it was implemented, from March to May, a participatory research (an adapted version of the pilot open scenario to improve Covid-19 prevention at schools). After that, a final Congress was held on June 3rd to present main outcomes to the local Government. A brief description is available here: <https://www.irsicaixa.es/en/news/escoles-sentinella-congress-students-present-recommendations-improve-covid-19-prevention>.

In Greece, three procedures were followed: (1) discussing educational scenarios to address relevant issues for the community; (2) identifying links to formal and non-formal learning objectives; (3) using the “Open Schooling” framework of Care-Know-Do (Okada, 2019) for preparing activities to engage students with teachers, researchers, and parents. These procedures were implemented through online workshops: five to prepare open schooling resources, four to organise the implementation and two to assess it. Along with synchronous online tools, the members of the team have been using asynchronous collaboration tools.

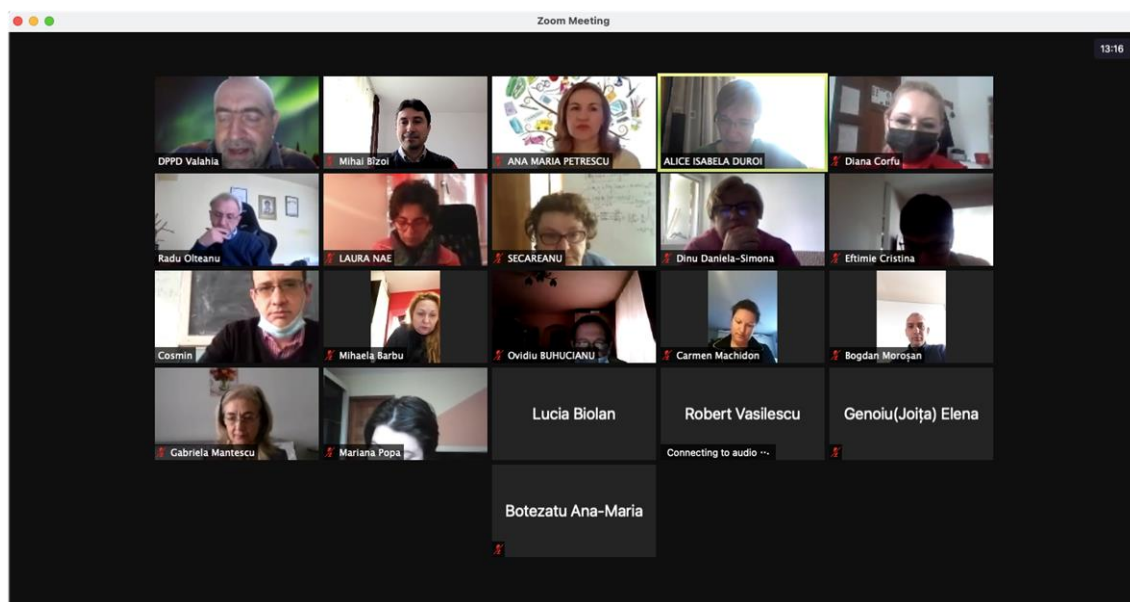


Figure 1. Online meeting with teachers and researchers

In Romania, in an initial phase (winter/spring 2021), the CONNECT project, its objectives and ideology was presented to schools that have been previously involved in projects oriented on promoting Science at all levels of education. In that period of time, there were finalized 13 CONNECT Partnerships which ensured a formal framework for making operational the coaching process and





implementation of Science Action Unit in formal / non-formal school activities, taking into account the pandemic situation, and mostly the online format. Figure 1 shows an online meeting with teachers and researchers in Romania held on April 23, 2021.

In conclusion, based on the data provided, the activity related to the conclusion of educational partnership agreements is, so far, completed for 4 countries, except Brazil.

Thus, within the CONNECT project, 36 partnership agreements were concluded in the first year of the project with pre-university education institutions covering 3 levels of education: primary, lower secondary and upper secondary. Also, discussions were held at the level of educational communities related to the conclusion of partnership agreements, which included the presentation of the CONNECT project (objectives, human resources, materials, time, etc.) and the activities subsumed to it, especially those related to coaching and the implementation of Science Actions scenarios.





3. Coaching activities

“Coaching is unlocking a person’s potential to maximize their own performance. It is helping them to learn rather than teaching them” (*Sir John Whitmore, pioneering coaching and Co-founder of Performance Consultants*).

At the same time, “coaching is partnering with clients in a thought-provoking and creative process that inspires them to maximize their personal and professional potential” (*International Coaching Federation - ICF*) (**, 2021)

Starting from these two definitions of coaching, as well as from the elements of theory and applications described in the previously developed material (*D5.1 Guidelines for implementation report*), within the CONNECT project a series of coaching activities were carried out, in the stage of piloting Science Actions units.

In this sense, a series of meetings were organized, generally in online format due to the pandemic context, attended by teachers from pre-university education and coaches (science specialists, education scientists and researchers) from the institutions with the role of national coordinator. During these meetings, the teachers from pre-university education were supported, guided, advised, from a scientific and methodological point of view, to be able to effectively implement the Science Actions units / scenarios, at the level of the classes and students they coordinate.

At the same time, the materials and working tools were presented and analysed, in order to use them properly, in accordance with the philosophy of the CONNECT project, but also with the characteristics of students, related to age, social / community background, their previous knowledge, concerns and their interests in Science, in general, and in the scientific issues addressed in Science Actions, in particular.

In general, the coaching activities were designed and carried out in accordance with the stages described in *The Coaching Program* (in CONNECT):

1. The Stage of inter / self-knowledge and familiarization with the ideology of the CONNECT project.
2. The Real Coaching Stage.
3. The Evaluation Stage of the Coaching Activities.

3.1 Coaches’ selection

The selection of coaches was made by reference to the criteria set out in the *Coach selection criteria tool*. In order to be involved as coaches in the activities of the CONNECT project, candidates must respond positively to at least 6 of the 10 selection criteria.





Regarding the number of coaches in the piloting phase, it is variable, from one partner to another. Thus, in the United Kingdom (OU) 4 coaches worked, in SPAIN / CATALUNYA (IRSI), one coach, in GREECE (RDE), 4 coaches and in ROMANIA (VUT) 3 coaches.

In relation to the application of the coaching criteria, the reflective analysis performed by the partners resulted in the following:

Positive issues:

- *Coaches were all voluntary collaborators with expertise, who are participating in CONNECT events and interested in developing their practices in training teachers, supported by an international project team (UK).*
- *It was valorised the professional experience of teachers, gained in activities or projects that promote Science education. At the same time, the transversal competences of teachers are also exploited: good communication and relationship skills, proactive, constructive, and supportive attitude, teamwork skills, open, flexible attitude to change and innovation (RO).*

Negative issues and limits:

- *The key issue to select more coaches will be finding volunteers with time available (UK).*
- *In a way, there are limits concerning the participation of beginner teachers, or of those who have less experience in teaching (RO).*

Added values:

- *This is a key issue and CONNECT needs to identify added value for coaches (UK).*
- *Applying selection criteria to the participating teachers allows to identify those who are able to adapt the Science Action Units to the students' needs, but also to the community specificities (RO).*

Plans to address the negative issues / limits:

- *To find more coaches, it will be important to extract best practices and clear procedures that could facilitate the coaches' work, and which will create a personal satisfaction for them (UK).*

3.2 Teachers' participation in the coaching process

As shown in the table below, only in 3 countries, out of 4 that reported data, all stages of the coaching process were completed at the moment this report was elaborated, the number of participating teachers being variable. In general, it





started with a larger number of teachers, and their number decreased during the next two stages. This phenomenon can be attributed to a multitude of causal factors related to the professional interests of teachers, limited time resources, the availability of teachers and students to participate in the activities proposed by the CONNECT project. An atypical situation was met in Greece, where, if in the first stage there were only 4 teachers, their number increased in the second stage to 25 and then decreases in the final stage to 19.

Table 5. The number of participating teachers at the coaching meetings

COUNTRIES (partners)	First stage	Second stage	Evaluation stage
United Kingdom (OU)*	91	-	-
SPAIN (IRSI)	44	22	10
GREECE (RDE)	4	25	19
ROMANIA (VUT)	27	19	19

* The second stage will be in September (due to COVID-19), the projects with students will start in August-October and the third stage is planned for October.

It should be noted that, so far, no data have been reported by Brazil. Due to the problems caused by the pandemic context, coaching activities in Brazil are envisaged to end in November 2021.

3.3 The coaching process on the 3 stages

A more detailed picture of how the coaching activities were carried out is provided by the data from the partners, related to the number of meetings held.

Thus, in the United Kingdom (OU), the situation is as follows:

Table 6. Number of coaching meetings held by OU partner (UK)

Stage of coaching process	Number of meetings
Engagement First stage	Three online meetings to start coaching before initiating science actions with students. M1. Presentation of the project to educational researchers interested in open schooling and online workshops were coorganised to introduce CONNECT to schools. M2. Webinar about key concepts of CONNECT. There were discussed: (CARE-KNOW-DO) framework; science-actions, science-capital, open and curriculum integrated approaches;





	<p>Teachers were invited to share their existing practices, discuss challenges and drivers. Few students also presented their views about challenges and initiatives to support collaborative learning during COVID-19.</p> <p>M3. Educational researchers with the OU coach guided teachers to complete pre-questionnaires and planning the activities for students to develop their science actions.</p>
Lesson Planning Second stage	<p>Not fully implemented yet. This stage will have 2 meetings and online asynchronous support. Each teacher who completed the pre-questionnaire received a personalised feedback indicating specific video to support teachers developed by the OU to enhance coaching. Teachers were invited to share their existing practices that they feel very confident, and they were invited to discuss the components and strategies that they are very unconfident with the coaches supported by the video clips. Teachers are now developing lesson plans including assessment and evaluation tools.</p> <p>Teachers led by educational researchers created WhatsApp group and will meet online to discuss issues before and after students' complete science action. The meeting before will support teachers to provide guidance for students to complete science action and the second meeting will be provided to guide teachers to present their best practices.</p>
Implementation and Evaluation stage	<p>Not fully implemented yet. This phase which includes final evaluation will be developed after summer holidays in Sep-Oct.</p>



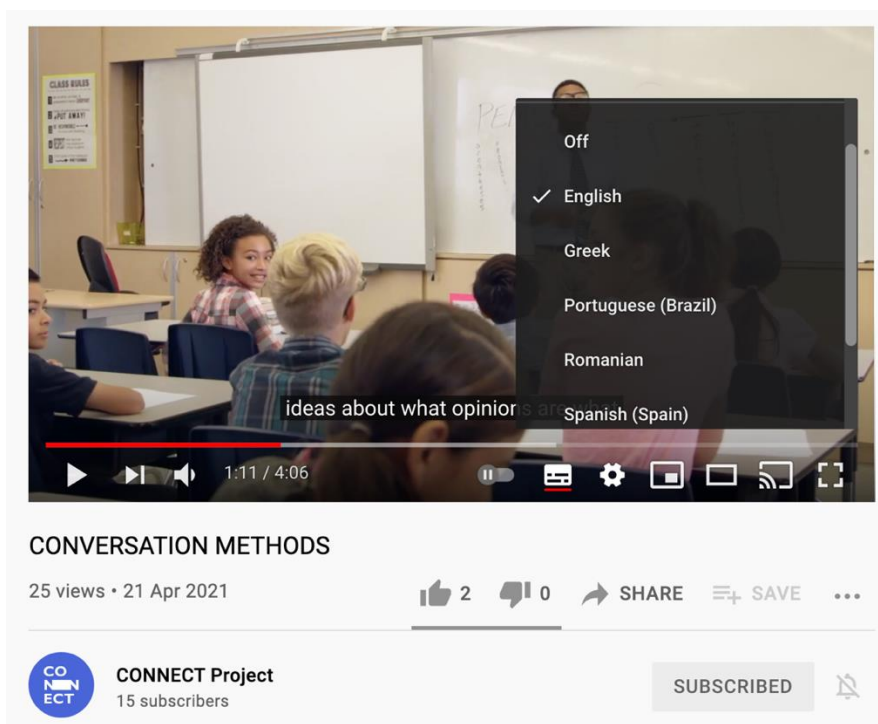


Figure 2. Video clips to support coaching in 5 languages

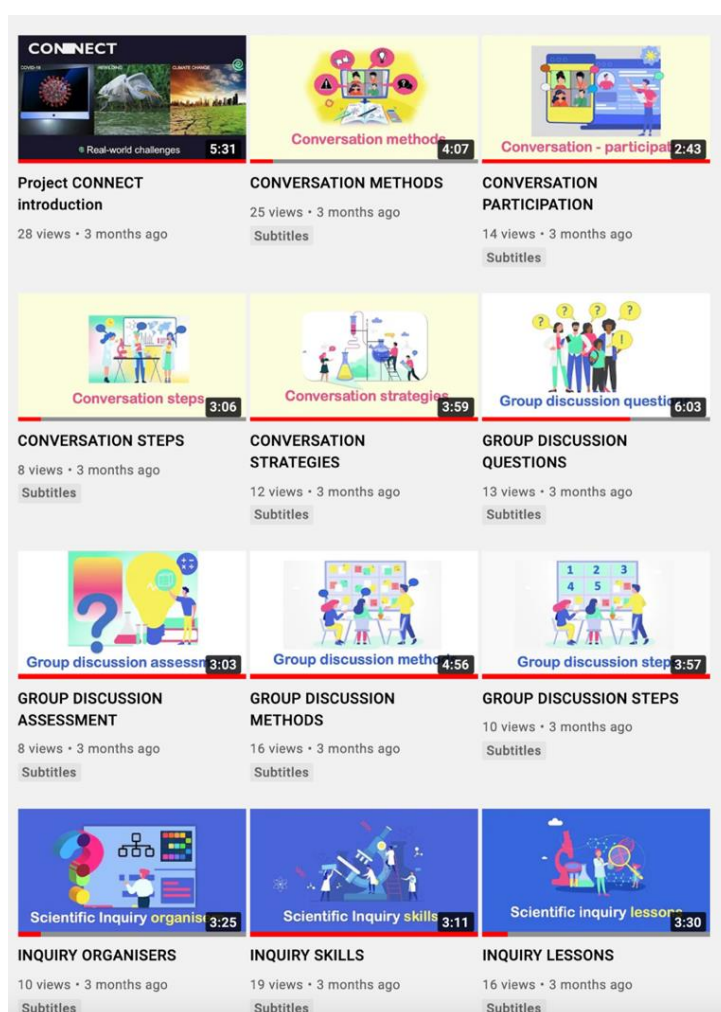


Figure 3. List of videoclips





Due to the pandemic situation, only the first stage of the coaching process was completed, the other 2 will be implemented between August and October 2021.

In SPAIN / CATALUNYA (IRSI) the coaching activities were carried out in all 3 stages, as shown in the table below:

Table 7. Number of coaching meetings held by the IRSI partner (SPAIN / CATALUNYA)

Stage of coaching process	Number of meetings
First stage	4 videocalls with school representatives (director, science head and some interested teachers, to inform and clarify doubts about the pilot before joining. It was offered after an email presentation of the pilot); 6 workshops (online)
Second stage	No meetings, the support was via email (14 emails during the implementation phase, without counting information or surveys emails sent to all schools as part of the implementation process)
Evaluation stage	No meetings (survey to Heads and teachers was sent at the end of the pilot, together with the post-test of student's science capital)

Also, in the case of Spain, only the first stage of the coaching process was carried out as planned, being a consistent stage with 10 meetings, of which 4 videocalls and 6 online workshops. Although the partner states that no face-to-face or online meetings were held in the next two stages, it can be appreciated, based on the reported data, that some aspects specific to these stages were made through workshops and surveys.

In GREECE (RDE) all 3 stages of the coaching process were completed, in the context of a number of 11 meetings, distributed according to the table below:

Table 8. Number of coaching meetings held by RDE partner (GREECE)

Stage of coaching process	Number of meetings
First stage	5 meetings to prepare open schooling resources with teachers and scientists and coaches.
Second stage	4 to organise the implementation with teachers, scientists and coaches.
Evaluation stage	2 to assess the implementation with teachers, scientists, and coaches.





Along with synchronous online tools, the members of the team have been using asynchronous collaboration tools, in all 3 coaching stages.

In ROMANIA (VUT) all the stages of the coaching process were also completed, being organized 9 meetings, according to the data presented in the table below:

Table 9. Number of coaching meetings held by VUT partner (ROMANIA)

Stage of coaching process	Number of meetings
First stage	2 meetings with teachers, school representatives, coaches & researchers (online: in Zoom and Microsoft Teams)
Second stage	2 meetings with teachers, school representatives, coaches & researchers (online: in Zoom and Microsoft Teams)
Evaluation stage	1 meeting with teachers, school representatives, coaches & researchers (online: in Microsoft Teams); 2 participations to the final activities - at “Mihai Viteazul” Gymnasium School, Targoviste, Damboviaa, and “Voievodul Mircea” High School, Targoviste, Dambovita)



Figure 4. Students present their work (Science action: Rewilding)

It should be noted that, in Romania, in addition to the meetings organized in online format, the epidemiological context allowed, in the evaluation stage to be organized 2 activities with face-to-face participation, which allowed a direct communication between VUT representatives, teachers and students from the two educational institutions (“Mihai Viteazul” Gymnasium School, Targoviste and “Voievodul Mircea” High School, Targoviste). Figure 4 shows the activity carried out in the “Mihai Viteazul” Gymnasium School, Targoviste on June 15, 2021.





3.4 Reflective analysis on implementing partnership with coach

The reflective analysis performed by the partners regarding the 3 stages of the coaching process led to the collection of the following information:

3.4.1 First stage (planning)

Positive issues:

- *Coaches are interested in planning the process based on their previous practices on school-university-community projects (UK);*
- *Teachers were very interested and happy to share their thought in the workshop to explore problems and opportunities for improving Covid-19 prevention at school environment (Spain);*
- *Teachers were very interested to know about how to customize the Rewilding scenario with the help of the coaches, researchers and scientists, as well, how to write new open-ended scenarios fitted to students' needs (Greece);*
- *The meetings were focused on: (1) inter-knowledge (for identifying the teachers' strengths and weaknesses, the aspects they want to improve in their own activity, the interests and needs felt in relation to their own professional development); (2) familiarization with the ideology of the CONNECT project, by knowing the team of specialists and their duties and responsibilities; (3) identification of own expectations, related to the experience / expertise to be gained from participating in the activities within the project (Romania).*

Negative issues and limits:

- *Local Coaches are interested in supporting teachers but are not sure of teachers needs and also lack of specific materials related to CONNECT (which are still in development) (UK);*
- *The workshop was online and lasted 2h but it was perceived as "extra" work for teachers since their time for meetings was already planned and this was an "extra" meeting to fit in their tight time schedule (Spain);*
- *There was a challenge of carefully selecting the science actions connected to the curriculum and which allow the collection of scientific data by researchers and teachers (Greece);*
- *Due to the pandemic and the exclusive online format of teaching activities (winter-spring 2021), not all the planned coaching instruments were applied. On the other hand, online discussions with teachers were held, covering in an important measure, the requirements foreseen in the coaching instruments (Romania).*





Added values:

- *OU prepared 12 video-clips to support teachers' CPD integrated to self-assessment and also translated, in Youtube, in 5 languages for all consortium partners (UK);*
- *They gave some interesting perspectives and opinions regarding Covid-19 prevention measures, difficulties to follow them, that contributed to better research findings (Spain);*
- *The guidelines and processes followed were clear, very well-organized and explained and at the same time flexible. The communication and collaboration among the members of the team were excellent and was performed using the appropriate collaborative tools. The members were committed to share their knowledge among them and furthermore to have this collective knowledge open to the community, engaging, also, the families of the students. They have started to gain emotional satisfaction from the whole project and the community has already attracted new members (Greece).*
- *The proper organisation of the first stage was important, in order to raise teachers' confidence in the project values and to create a positive working environment (Romania).*

Plans to address the negative issues / limits:

- *In UK it is planned to engage coaches to participate in CPD discussion with teachers and co-develop with the OU more videoclips, as well, refine the self-assessment tool used in WP6 (UK);*
- *Agree with teachers in the cooperation agreement to set what it is needed and expected and what they will obtain from the beginning of the year-course, to better fit in their organizational schedule (Spain).*
- *There is a challenge of carefully selecting the science actions in a way that connects to the curriculum and allows to gather scientific data by researchers and teachers. Limited time in curriculum implementation and also lack of appropriate technology on behalf of the students - particularly if distance learning is continued - are considered also as challenges to the community of learning (Greece).*
- *For the second year of the project, there is the intention for a better planification of all steps, that supposes the applying of the designed instruments (Romania).*

3.4.2 Second stage (implementation)

Positive issues:

- *Communication by email, when the teachers had doubts, was agile and practical (Spain).*





- *There were regular online meetings, a mailing list and also a common workspace that helped the collaboration and the monitoring of implementation (Greece).*
- *In this stage, for the implementation of the Science Action Unit, the teachers benefited from the support of specialists, from the scientific and didactic perspectives. During the online meetings, discussions were held, and guidance was granted, as required by several teachers (Romania).*

Negative issues and limits:

- *Communication by email and having a single coach for many participants will not be feasible when the number of schools/teachers implementing CONNECT science-actions will increase (Spain).*
- *Customizing Rewilding for marine biology needed more data and effort, that is why this customized enwidening scenario were not implemented and one teacher (and schools associated) dropped out (Greece).*
- *Several delays and differences between the teachers were recorded, related to the implementation process, in terms of timing, face-to-face and online participation of students, approaching of some tasks (Romania).*

Added values:

- *A coach offers support and increase teachers' confidence to engage students in science-actions (Spain).*
- *Coaches as coordinators of a community of learners (Greece).*
- *The teachers became aware on using such approach (Science Action Unit) on teaching Science. They had the opportunity to introduce the Unit in a blended-learning format, but also to adapt the number of dedicated hours to the special situation imposed by Covid-19 (Romania).*

Plans to address the negative issues / limits:

- *Following recommendations from WP5 to select and train coaches (Spain).*
- *A coach responsible for every two or three teachers that implement a science action will be the target for 2nd and 3rd year (Greece).*
- *For the second year of the project, there is the intention for a better planification of all the steps, concerning the correlation of the moments dedicated to the implementation process. This will help the teachers to collaborate with coaches, specialists, researchers, but also with their colleagues, in a rigorous way, sharing best practices and finding solutions for unexpected problems (Romania).*





3.4.3 Evaluation stage

Positive issues:

- *A baseline evaluation of existing practices before CONNECT were implemented (UK).*
- *Positive feedback was obtained from School head and teachers (Spain).*
- *Two evaluation meeting were held and one congress. The messages by the teachers and students were very encouraging (Greece).*
- *In this stage, an online meeting was held with the view to analyse the existed situation before the effective evaluation. Then, the teachers' and students' feedback were collected, with the intention to make a qualitative and quantitative processing of the collected data, as well as to identify solutions for optimization of future coaching activities (Romania).*

Negative issues and limits:

- *Data still in collection and data analysis will be developed before they start their science actions with students (UK).*
- *Post-implementation surveys (Head and teachers) were sent during the last three weeks of the year-course and it was difficult to obtain answers since it's a busy moment for schools, and also because they have already filled in other surveys from the research project led by the Government (Spain).*
- *More time, scientists, and data (for the enduring scenario) are needed. Also, there is need to refine pre- and post-tests for students (Greece).*
- *Due to the pandemic, in most cases, this stage overlaps with the final period of school year, even this was held in face-to-face format. In this period, the teachers participate in many didactic and administrative activities, so it was not the proper period for them to be concentrated on project evaluation issues (Romania).*

Added values:

- *Coaches who are academic staff in education (researchers) are engaged (UK).*
- *All School Heads showed interest in joining CONNECT the next year course (Spain).*
- *All teachers that implemented the scenarios (12 teachers) were very keen of the process and presented their work in a congress with policy makers (Greece).*
- *The feedback received from teachers and students will allow a better projection and achievement of the activities foreseen in Science Action Units (Romania).*





Plans to address the negative issues / limits:

- *Academic coaches are interested in publishing papers and develop innovative work in the area of teachers' professional development with open schooling. They are supporting data analysis (UK).*
- *This evaluation surveys should be planned and scheduled in advanced, consulting with them the best time-slot according to the project needs but also with their own schedule (Spain).*
- *More time, scientists, and data (for the enwidening scenario) are needed. Also there is need to refine pre- and post-tests for students. Last but not least, it is planned to have one coach for every two or three teachers (Greece).*
- *For the second year of the project, following a better planification of the activities, correlated with the structure of the school-year, it is planned to avoid overlapping with ordinary scholar activities (Romania).*

In conclusion, it may be noted that in 2 countries (Great Britain and Spain) the pandemic context did not allow the entire coaching process, this being limited to the first stage, in other 2 countries (Greece and Romania) the coaching process involved all stages, even though the meetings were mainly conducted online, and in Brazil this process has not been initiated, yet.

The figure below shows a banner made by students from “Voievodul Mircea” High School, Targoviste, Romania.



Figure 5. Students' banner (Care Know Do - Connect - Rewilding)





4. Science actions implementation

The implementation in the classroom was done using the materials for the scientific actions developed within the project. There are two types of didactic scenarios: structured and open-ended. Table 10 shows the titles of the didactic scenarios that have been implemented or are to be implemented in the piloting stage.

Table 10. Science actions implemented or to be implemented

Partner (Country)	Structured scenario title	Open-ended scenario title
OU (UK)	-	Environmental protection in semi-arid region
		COVID-19 Human body cells and immunity system
		Biogenetic and Racism
IRSI (ES)	Do we vent our classroom well enough? And our house?	Recommendations to improve Covid-19 prevention for and with the education community (a participatory research)
	How does the use of the mask affects the transmissibility of SRAS-CoV-2?	
	How do hand washing and the risk of Covid-19 infection relate?	
RDE (GR)	Rewilding	Renewable Energy
		Global Warming - Chemical Pollution
		Plastics
		Measuring CO2 for coping with pandemic Covid-19 aerosol transmission and using
		Map skills for problems solving
VUT (RO)	Rewilding	-

Due to the pandemic situation of Covid-19, from 7 partners, in 5 countries, that had to do pilot activities in the first year, only 4 provided data about implementation. The others have started the implementation process, and it will continue it in autumn. A much clearer picture is presented in Table 11, where a comparison is made of results with the targets assumed in the project, for the first year.





It can be seen, even in these difficult conditions, that the total values regarding the number of teachers have been reached, and the number of students is only with 17% lower than targeted.

Table 11. Implementation's summary - first year

Partner institution	Targets for the first year		Piloting outcomes		
	Teaching staff	Students	Schools	Teaching staff	Students
OU	8	240	-	-	-
MS	8	240	-	-	-
RDE	8	240	12	18	336
VUT	10	270	10	27	353
IRSI	15	450	6	22	868
UNEB	12	360	-	-	-
APC	12	360	-	-	-
TOTAL	63	1890	28	67	1557

4.1 Brief needs analysis for a successful implementation

Below there are presented some aspects identified by the Connect partners as being important for the successful implementation of partnerships with coaches.

The engagement of policy makers, academic (researchers) teachers and also students are important to plan the collaborations to support students' science actions (OU, UK).

It's key to have a direct contact with teachers that are implementing the science-actions with their students. It could be mail-based, platform-based, but it should be agile and fluid. Also, the timeline and everything expected from them should be very clear from the beginning (what, when and how are we going to require feedback, outputs, or whatever data we need from them) (IRSI, ES).

There is a need of experienced coaches with specialized knowledge, for each teacher, to have a clear and defined role as well as specific responsibilities. The guidelines and processes that must be followed have to be clear, very well-organized and explained and, at the same time, flexible. There is a need of regular meetings during which brainstorming, and decision making are taking place. The communication and collaboration among the members of the partnership must be performed using appropriate collaborative tools. There is a need to share the participants' knowledge and furthermore to have this collective knowledge open to the community, engaging, also, the families of the students. Emotional satisfaction from the whole project is also important (RDE, GR).





Furthermore, the collaboration and communication between teachers and researchers offers the most to students and teachers that pursue students' science capital augmentation. Students have the opportunity to get familiar with the scientific method and to offer creative ideas, since they do not follow stereotypes in their way of thinking (RDE, GR).



Figure 6. The researcher answers the students' questions

The coaching process is realized in a partnership frame and represents - in fact - a strong relationship and communication between coach and beneficiary of the process, with the aim to facilitate learning, improve performance, and enable teachers to develop their competencies in Science education. It is important to emphasize the process on the main following aspects: (1) asking open-ended questions that focus the teacher's attention on relevant details; (2) setting an environment that annihilates the misconceptions or wrong attitudes related to Science, in general, and teaching Science, in particular; (3) understanding the differences between a constructive approach of teaching and learning Science, and the traditional way of presenting Science to students (VUT, RO).

Figure 6 shows the interaction between a researcher, students, teachers and coach - activity carried out face to face at "Voievodul Mircea" High School, Targoviste, Romania on July 8, 2021.





5. Conclusions

Educational partnerships built around schools and made up of various stakeholders are the driving force behind the Connect project's actions to change the mentality in schools and turn them into inclusive open schools. Educational partnerships will be built only if there are sustained activities engaging teachers, researchers, headmasters, industry representatives, parents, etc. in Connect science actions.

Because the concept of science action involves the use of new learning methods, in service teachers must be trained in order to implement didactic scenarios of science action. In the Connect project, this role is taken over by coaches.

A coach highlights the professional experience of the teacher and contributes to the consolidation of transversal competencies: communication and relationship skills, flexible attitude, open to teamwork.

The implementation of the partnership with the coach depends very much on the coaches who are selected. When the number of teachers who will implement will be very high and the number of coaches must be proportional. Finding coaches who meet the selection criteria will be one of the challenges of the next stage of implementation.

A successful implementation usually has the support of a researcher or specialist who intervene in a pertinent way to support the teacher in carrying out the scientific action.

Customizing scientific actions consumes a lot of time that teachers do not have, and overlapping project activities with busy teacher periods (e.g. when there are national exams) should be avoided.

For the next stage of implementation, the development of activities must be rigorously planned. The structure of the school year and the periods when teachers are not available must be considered. Also, if the Covid-19 pandemic situation continues, adaptations must be made so that the implementation can take place online.

The last 11 months of the project were marked by uncertainty, closed schools, and cancelled school activities. All these has led to the accumulation of fatigue and frustration both for students and teachers / parents. Even in these conditions, the activities of the Connect project were received with great enthusiasm by teachers and students. From their statements, it results that both, those who have piloted scientific actions and those who have not yet succeeded, want to continue next year.





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Uk
www.open.ac.uk



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Denmark
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Spain
www.irsicaixa.es/en/livinglabhealth



MSc
Uk
www.shop.masteryscience.com



VUT
Romania
www.valahia.ro



LOBA
Portugal
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