

R4C

Reflecting for Change

Deliverable 2.2

**Report on Development of the School
Community**



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Title	Specifications on community building and participatory engagements activities
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Abstract	This document describes the Schools Support Framework and the Community Building Support Services. Namely the series of engagement activities that are foreseen during the implementation of the project.
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Executive summary

This document aims to report the engagement and implementation activities that helped the creation and enrichment of the Reflecting for Change community of users (WP2).

The main objective is to present the strategies adopted by each partner in order to ensure the necessary support to the R4C community. The support mechanism as it was designed encompassed engagement activities, professional development activities, support infrastructures, recognition mechanisms and community building strategies. The pandemic obliged each pilot country to adapt these mechanisms to an online effort. These efforts are documented in this deliverable.

The document starts with a revision of the main aspirations of R4C and strategies of the project, a revision of all tools and resources available for each of the participating schools, and the necessary adaptation due to the pandemic.

Chapter 2 is devoted to the description of the methodology adopted by each country to engage schools and educators and the structure created to support the implementation of the vision of the project. The actual materialization of the implementation activities in each country is presented providing some more details on the different strategies adopted by each national coordinator in terms of attracting the interest, selecting the schools, adaptations to the implementation roadmap and support infrastructure put in place.

Chapter 3 describes the two R4C summer schools, that took place in an online format. It describes the vision for each summer school along with details for its concretization.

Chapter 4 is devoted to present examples of the projects implemented by the students in the 3 countries, with a selection of best practices examples.

The last chapter is devoted to a brief conclusion of the main achievements of the community building efforts.

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1 Introduction

The main objective of Reflecting for Change was to promote a self-reflection exercise in schools as a driver for innovation and school modernization. Over 300 schools, from Greece, Italy and Portugal, had the opportunity to review their practices, vision and procedures towards the desired improved learning outcomes for their students. As part of this effort and as described in D2.1 Specifications on Community Building and Participatory Engagement Activities, a series of actions were put in place in order to attract the attention of schools in each of the countries, leading to the creation of a network of an R4C Community of Schools (fig.1). At the same time the support services were activated where teachers could find a space to report their progress, tips for their foreseen progression, the preparation of their development plans and practical examples to be adopted. Each school created an account at the project platform and by using the exploratory mechanism were able to find other schools participating in the project. They were then able to find colleagues in their region and from the other countries, to find schools with similar status and share their best practices.

In this deliverable the community building effort in each of the countries is presented with very encouraging results.

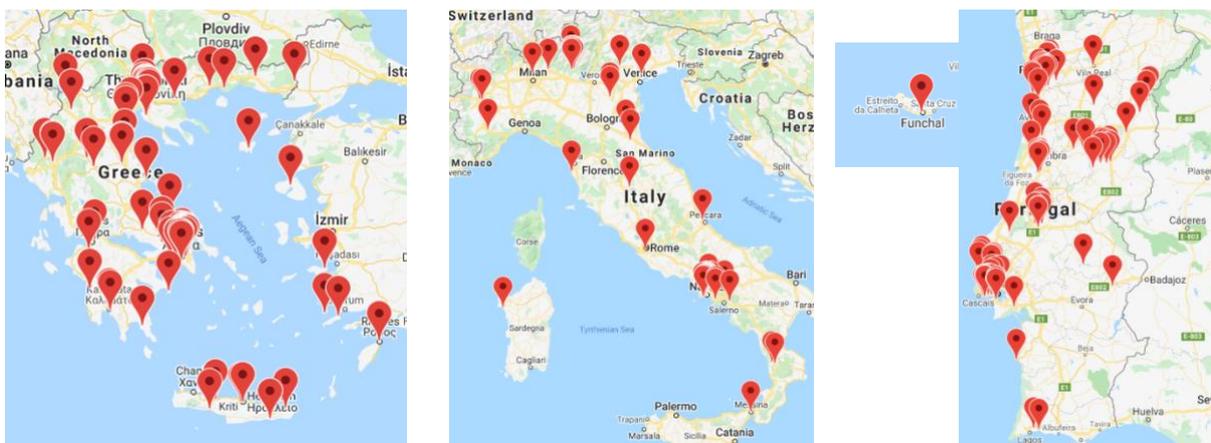


Figure 1 Map of the R4C schools in each of the countries

The school year of 2020-2021 was a very atypical and unexpected year. For schools it represented the need to shift quickly from normal classroom setting to distance learning education. Teachers' needs for improvement of their digital competence profile became not only visible but also a matter in need of urgent attention. Schools had to shift between the open and close state during the whole school year.

The outbreak of the COVID-19 pandemic imposed several changes to the initial foreseen model to approach schools and support educators, students and their communities. But R4C was already a step in the right direction to promote the necessary changes. The needs just became more urgent. For the partners it suddenly became an opportunity to support schools and their educators in this very demanding period.

The engagement and support of teacher, as described in D2.1 was already part of the vision of R4C, but the pandemic required a quicker and renewed vision on how this objective could be quickly materialized in support of the many schools and educators facing lack of knowledge and experience on how to work online with their students. R4C provided access to a lot of

examples in the format of projects or suggestions of digital tools and resources that could be used for distance learning. Immediate actions were taken by the 3 partners implementing the project in order to support teachers as best as possible as presented below.

Reflecting for change, as perceived by the sample results presented in this document (section 3) quickly became teachers best travel companion. Through training activities, conducted differently in the 3 countries, educators found the necessary support to improve their competence profile and embrace the challenging situation imposed by COVID-19.

The project vision had to be quickly adjusted in order to meet the urgent need of training/support from the part of educators to integrate digital tools and resources as a means to continue, as normally as possible, their teaching plans. R4C brought the possibility of inter-school collaboration, of peer-to-peer support and the integration of students centred methodologies to improve their learning curve. Teachers found in R4C a platform to enhance their competence profile, to embrace new challenges and find completely new ways of working with their students. Students learned how to collaborate with their colleagues from a distance, interact with their communities via online tools, organize collaborative projects and produce amazing results for the well-being of their communities. The pandemic was unexpected but R4C methodology was ready to provide the necessary platform for learners and educators and the many success stories shared by the teachers and students are a solid proof of this success. The number of schools, teachers and students that directly participated in the R4C pilots can be found in Table 1.

Table 1 Schools, teachers and students that participated in the pilots of R4C

	Schools	Teachers	Students
Greece	106	542	7200
Italy	101	502	6300
Portugal	109	534	7500
Total	316	1578	21000

2 Engagement Activities

2.1 Initial vision for the Engagement Activities)

The initial vision for the engagement activities was the organization of 3 cycles of activities:

- the **Visionary Workshops**, where the overall vision of the project would be presented to the schools' leaders and teachers.
- the **Practice Reflection Workshops**, where participating schools would have the opportunity to jointly reflect on their Self-reflection results, the involvement of their teachers and students and the validation of their development plans;
- the **Summative Workshops** where the overall results, the students' projects and evolution of the school profile as an overall could be reviewed and the development plan updated accordingly.

The whole vision for these activities had to be changed. Face-to-face events were no longer possible, priorities for schools dramatically changed and, although the overall vision of the project was kept intact, and in fact very important to support schools in this difficult period, the materialization of the engagement and implementation activities had to assume a different format, respecting the needs and constraints of every pilot site. Most activities shifted to the online format and each country adopted a different strategy. The five pillars of community building, as presented in D2.1 were maintained as the overall methodology could be kept in an online format (Engagement, training, support, recognition and community). All the steps were followed and successfully materialized in the form of online training and support, distance learning collaboration among students, involvement of the school and local community as partners and beneficiaries of the student's projects results, official recognition of the efforts and the final R4C community at a national and international level.

2.2 Actual materialization of Engagement and implementation Activities (Greece, Italy and Portugal)

2.2.1 Greece

The Institute of Educational Policy is the national coordinator for R4C in Greece. From the point of view of the partner R4C offered the opportunity to the schools to do a step forward, through a clear vision and strategy (and tools), which supported an interdisciplinary environment of innovation, promoted collaboration with other schools as well as with non-formal and informal education and succeeded finally to unfreeze the "current" situation at many schools and support it, to move on, to transform to an open and e-mature school. In other words, to overcome the typical structural inertia. In order to adapt to the pandemic situation in the country the partners adopted the following sequence of actions:

a) Call for Schools

An open call to all schools was announced where the objectives of the project was clarified with a list of all benefits and requisites for schools participating in the project. Schools were invited to present an application presenting their motivation to participate in the project. Schools had also to describe what was their experience in school innovation and to propose a school project (*Mainly on STEM, which is a powerful multidisciplinary environment of education*) and how they plan to use responsible research and Innovation in this project in the framework R4C project. Furthermore, schools were asked to organize a pedagogical team and a coordinator for R4C in their schools.

b) Schools Selection

An independent committee was formed in order to select the schools. Besides the above-mentioned criteria, the committee took also under consideration:

- The geographical distribution of the schools, (*schools from all regions of Greece were selected*). The percentage of the selected schools depended also on the population of the region
- The type of regions e.g.: Urban, suburban, rural, mountainous, coastal, etc.
- The variety of school types: (Kindergarten, primary, secondary, modern schools, music schools, school of arts, vocational schools, special needs schools, experimental schools, multicultural schools, second chance schools etc.)

This selection procedure enabled a representative school sample from all over Greece and all school types.

c) Roadmap for implementation

Schools and teachers were introduced to the overall project philosophy and resources, namely: The Roadmap of Openness, the Self-Reflection Tool and the Self-Development Plan, student's interest and motivation on science questionnaires, the accelerators, platform for collaboration, etc. R4C presented a very demanding educational environment both for teachers and students, but it provided them with extra knowledge, competences, and values to face the new unexpected educational situation during the pandemic. It was not an easy procedure, but the achievements were very high as can be seen by the projects developed by the students.

d) Support infrastructure with extra effort on communication

Greek schools participating in the project benefited from a continuous support provided online and in a Moodle platform:

1. Online Support

Teachers could benefit from Email-Helpdesk, online meetings, synchronous and asynchronous distance learning opportunities. A continuous communication scheme was established with the schools (both with the headmaster and the coordinator of the pedagogical team of the school). Emails were restricted to the minimum necessary in order to ensure fluid but not overwhelming conversations. Besides the tools and general guidelines for the implementation of the project, teachers knew that the R4C team was there at any time to support them and answer their questions. Schools could interact with the supporting infrastructure by sending an email to the project team (specific educators of the team supporting the schools) or to the R4C Helpdesk and by participating in the optional online weekly meetings via MS teams and other platforms. Although meetings were optional, more than 70% of the schools participated. Because of the geographical distribution of the schools all around the country, it was necessary to use tools for synchronous and asynchronous distance learning.

2. Moodle Platform

Except for the tools and platforms of the project, the Greek schools had also available a Moodle platform to support them. In this platform participants could find supporting material (guidelines, presentation of training seminars), teleconference tools such as BBB, MS teams, repositories for the dissemination of school projects and other activities, announcements for the schools' own training actions, but also training actions of third parties that teachers could follow at their discretion. There were also two communities established in the Moodle platform (STEM and the use of ICTs) aiming to increase the communication between schools on those subjects. This Moodle platform acts as one more repository for the Greek schools. Each school can go back at any time to find all the national resources of the project.

3. Webinars

A series of 12 webinars were organized to support educators, in which 900 teachers participated. Two of the webinars were organized in collaboration with Greek R4C schools. The topics of the webinars varied:

- (a) on the one hand, they concerned the tools and the implementation procedures of the project itself and
- (b) On the other hand, specialized topics emerged through the project implementation and were proposed either by the project team of the Institute of Educational Policy (IEP) or by the R4C school teachers.

Examples of webinars topics: (a) "Ideas, suggestions and experiences from a STEM perspective in the teaching of Mathematics in the context of R4C" (b) "Experiences from digital tools for organizing teaching", (c) Writing scientific articles with our students" (d) "The implementation of R4C philosophy in an intercultural school". etc.

e) Final Results

Some lessons learned from the implementation of R4C in Greece:

- Schools continue ongoing self-reflection, discussion and learning set-up.
- School projects are incorporating more and more ICTs.
- Schools increase cooperation and networking with other schools, informal and non-formal educational units and scientific, social, local community and social inclusion structures.
- Schools become more active in dissemination of their activities and results. (They became bridges of communication and friendship with the neighbourhood and society.)
- Teachers become more familiar with educational platforms and year after year they participate more frequently in online training activities.
- Schools prepare and organize their own training activities for their teachers and the school community too.
- Students increase interest and motivation in sciences.

Implementation of OSOS/R4C tools in Greek schools [like ongoing reflection (SRTs), discussion and learning set-up (SDPs and school projects), Students' questionnaires regarding interest and motivation on science....] show that the participating schools are increasing their openness and through openness, they are gradually increasing their e-maturity. It also supports the sustainable development goals and especially goal 4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all). The combination of project's tools with national initiatives from the Greek Ministry of Education like "21st century skills workshops", "Evaluation of schools" and other regional or local initiatives lead the schools to increase further their openness and strengthen the concept of open school (and step by step to be transformed into "sustainable" schools).

As a result of this combination of national and European initiatives, OSOS/R4C project is recognized as a good practice for Greece in the framework of GENE (Global Education network Europe). Finally, it's clear (according to the data collected) that schools are changing ... and they are changing because they want to change. There is very compelling evidence that schools have the competent staff to make a difference although sometimes they need a spark (from the system itself or from an external factor like R4C project) to increase the temperature in order to start changing.

2.2.2 Italy

To the Italian national coordinator, the R4C project offered the opportunity for schools to take a step forward, through a vision, a strategy and key tools, which supported an interdisciplinary environment of innovation, promoted collaboration between schools and non-formal and informal education, to move forward, to transform into open and current schools that can respond to the challenges of the 21st century. R4C was an opportunity to implement on a large scale a process to facilitate the transformation of schools into ecosystems, serving as shared learning places for which leaders, teachers, students and local communities have shared responsibility, authority and they all have benefited from the increase in the social capital of their communities for the development of responsible citizenship

The work carried out with Italian schools to promote and implement the philosophy of R4C in the hope of a change, necessary to respond effectively to the demands of an open school and a teaching of skills, which requires a radical change in the didactic action of teachers in order to promote flexible, critical “formae mentis” in students, able to make knowledge interact problematically, to operate in work situations and contexts, is described below.

a) Engagement activities to recruit schools

As a first action, the schools that participated in the OSOS project were contacted and some of them agreed to participate in R4C as well. Thanks to the countless contacts with teachers from all over Italy that Città della Scienza has built over the years, events have been organized to present the R4C project to a large number of schools. A communication campaign was carried out on the Città della Scienza website and on social networks. Online meetings were organized with interested schools to clarify the objectives of the project and the actions to be carried out (so that everyone knew from the start that it was a rather demanding procedure). At the end of this first phase, the interested schools communicated their interest to be part of the project.

b) Implementation

Participating schools shared their experiences in school innovation and proposed school projects (mainly on STEM, which is a powerful multidisciplinary education environment) and how they intended to use the project's self-assessment tools. At the end of these preliminary phases, the Italian partners was able to involve 100 Italian schools of all types and levels and from different educational levels: high schools, professional institutes, technicians, etc., the largest number coming from the Campania Region. All this has given the opportunity to work with a representative sample of schools from all over Italy and of all types of schools.

Project resources were presented to teachers and school managers. They were introduced to the Roadmap in the start-up phase and subsequently the use and compilation of SRTs, SDPs and student questionnaires pre and post.

Considering the complicated period (Covid-19 pandemic emergency) in which the project took place, with closed schools, distance learning, hybrid teaching, the work carried out for R4C was quite demanding for both teachers and students, although this has provided them with extra effort, knowledge, skills and values to deal with the unexpected new educational situation during the pandemic. It was not an easy procedure. Although the R4C schools were “almost ready” to face the new reality and to continue teaching and learning through online tools.

The global situation described above required the Italian R4C team to be more involved in support activities for schools. A series of online meetings were organized to explain to the teachers how the required actions were carried out, how the self-assessment forms were completed, and how the Roadmap was interpreted and applied to the school situation. A frequent communication scheme was established. All of this created a collaborative environment where teachers knew that the team for the R4C project was there at any time to support them and answer their questions.

At the end of all this commitment by both the schools and the Città della Scienza team, the result was positive and significant educational projects were presented by some schools that contain within them the characteristics of an open and sustainable school that responds to requests for new basic knowledge.

In conclusion, the experience made with R4C showed that schools want to change and teachers, amid a thousand difficulties and personal sacrifices, are increasingly open to new things. Furthermore, we can affirm that in schools there is more and more competent staff willing to get involved in the challenges and changes required by today's society, but there is also the need to be recognized more and to feel protected by the presence of political decision-makers who facilitate this change and make the school view more sustainable. It is possible to change but with the support and commitment of everyone.

2.2.3 Portugal

a) Digital Transition Plan

The Portuguese government launched a very ambitious plan to promote the transformation of the country, its modernization, through the improvement of the digital competences of people, companies and the state itself. Within this plan there is a specific pillar devoted to the digital development of schools. All schools in Portugal have to create an action plan for the digital development of their infrastructure. It includes the infrastructure per se but also a very ambitious teachers training program that aims to reach all teachers in the country. The plan also incorporates measures to provide individual equipment for the students, to guarantee free mobile connectivity for educators and learners. It also foresees access to collaboration tools, digital tools and resources. R4C was well received by the Ministry of Education and perceived as a good add-on to the plans that are already being implemented in the country.

b) Engagement Activities

The start of the engagement activities in Portugal were a bit delayed in order to accommodate the recently launched national strategy¹ plan, PADDE (Plano de Ação para o Desenvolvimento Digital das Escolas – Action Plan for the Digital Development of Schools). The plan determined that all schools in Portugal should implement a Digital Development Plan which includes the use of SELFIE tool and Check-in Survey² by all educators, in order to assess their digital competence profile. Although the law launching the initiative was published in April/2020, it actually started being implemented from July on. Along with this demanding task, schools were also being faced with the COVID-19 challenges with a compulsory closure that took place during designated time intervals, hindering the R4C implementation in various cases. Accommodating the necessary requirements for COVID-19 and implementing PADDE required a lot of work from the part of the schools and the national coordinators of R4C in Portugal decided to wait for the most adequate moment to officially engage schools in the Reflecting for Change project. R4C is completely in line with this national strategy and provides a strong materialization of the improvement of educator's

¹ <https://www.dge.mec.pt/pcdd/index.html>

² <https://ec.europa.eu/eusurvey/runner/DigCompEdu-S-PT>

competence profile associated with the necessary methodology for the digital transformation inside classrooms and in the involvement of the school and local communities. In order to recruit schools NUCLIO launched a call for interest inviting schools to participate in an online visionary workshop. As it was not possible to organize a face-to-face event, due to the COVID-19 restrictions, the activities were conducted online. In total a series of 20 sessions were organized having the participation of headmasters, school's coordinators and/or other participants appointed to represent the school. The overall vision of the project was presented to the participants and the full R4C journey proposed to them. In total over 150 schools participated in this process. Interested schools had to materialize their participation in R4C by informing via email and filling in the R4C survey. NUCLIO has produced a version of the survey in Portuguese to eliminate a potential language barrier. Over 100 schools filled in the survey. The evaluation of the schools, according to their SRTs, was delivered to all schools along with an invitation to participate in an accredited training course. The course had a format of workshops (50 hours training – 25 in synchronous sessions, 25 autonomous work and classroom implementation).

c) Accredited Training: Methodologies and Students' Projects

In order to support schools to improve their digital competence profile, their internal community building process and their engagement in community actions, NUCLIO successfully accredited a training course for educators where teachers were introduced to the methodology of Design Thinking for Education, Universal Design for Learning, Open Schooling, Inquiry and Interdisciplinary Based Learning. Educators were invited to work in groups inside their schools or to collaborate with colleague from other schools. There was continuous support for the materialization and implementation of their projects with the students. Over 200 teachers participated in the course coming from schools distributed across the country and covering all grade levels. They created 40 different projects that were implemented in over 160 classrooms.

d) Reflecting on their Schools

An important part of the training was devoted to reflecting with the teachers on the results of their schools, to collaboratively create their schools' development plans and to retrieve their vision on the actions their schools should implement in order to improve the school environment for teachers and education. Special attention was given to the use of digital tools and resources to improve the community building actions at an internal and external level. Teachers were invited to discuss within their school cluster group and/or with colleagues from other schools, what in their opinion would be a healthy relationship with their local community and as a result many ideas were registered and delivered to the school's headmasters.

e) Final Results

All the scenarios developed by the teachers had as mandatory the use of digital tools, the adoption of the Design Thinking Methodology and the integration of the Universal Design for Learning Principles. Another requirement was that the Design Thinking had to be done by students and they were the ones in charge of imagining and creating the foreseen solutions for the community problems identified by them.

3 Summer Schools

The R4C consortium organised two International Professional Development Courses in July 2020 and in July 2021. These courses brought together school heads and teachers from the participating schools as well as school heads and teachers from other schools and different countries. Due to Covid-19 limitations to traveling, all summer schools took place online.

3.1 “Towards an Open and e-Mature School” Summer School 2020

More than 60 teachers from all over the world were introduced to an **integrated framework** fitting all the pieces together: providing mechanisms to monitor and assess the progress at different levels, introducing and helping to sustain a culture of change, supporting community and capacity building (fig. 2), providing tools and resources for innovative projects. The summer school took place 6-10 July 2020.

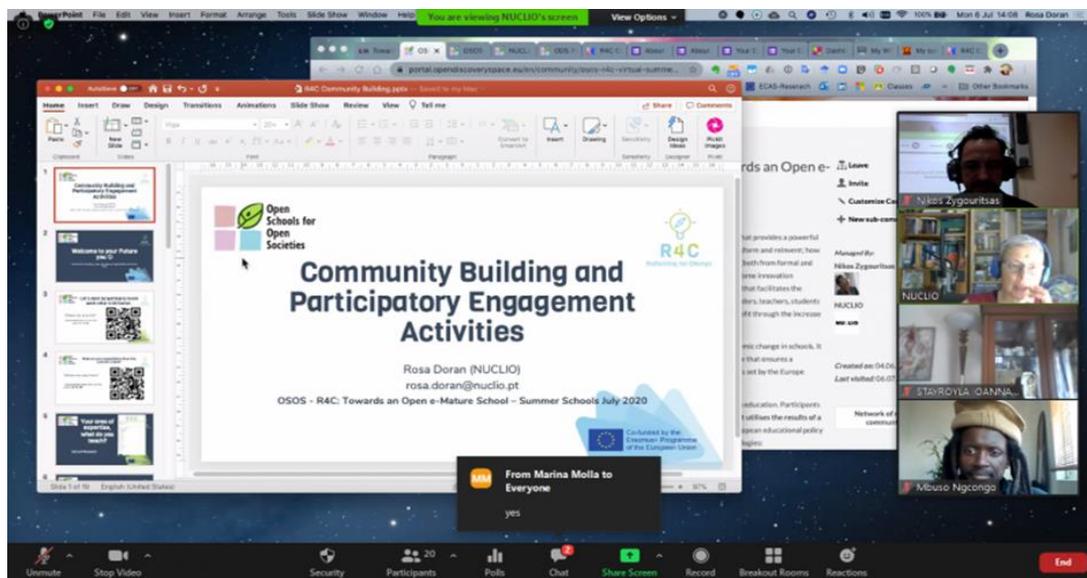


Figure 2 R4C community building being presented during the R4C 2020 online summer school

The summer school offered a series of webinars that included:

- The Open Schooling Roadmap
- The R4C School Innovation Model
- Identifying the real needs of your school
- Using self-reflection tools to set up a roadmap and an innovation strategy that transforms schools to innovative ecosystems
- Introducing RRI Principles in your school projects
- Schools as learning organisations
- Building synergies around Europe with common projects

The summer school has been designed to promote the use of self-reflection tools as a vehicle to support innovation and systemic change in schools. It proposed an innovation support framework and a roadmap to schools seeking to introduce a change culture that ensures a meaningful uptake of sustainable innovation.

3.2 “Towards an Open and e-Mature School” Summer School 2021

The summer school that took place 5-9 July 2021, focused on the importance of self-reflection tools in the aim to foster sustainable e-maturity and openness in schools. 55 teachers participated and had the opportunity to explore how schools may move from self-reflection to developing a comprehensive plan of action that utilizes the results of a self-evaluation exercise, but, crucially, in combination with fundamental principles and mechanisms of European educational policy for schools. Furthermore, the “Towards an Open and e-Mature School” Summer School presented the concept of Schools as Living Labs (fig. 3). Living labs are user-centred, open innovation ecosystems based on a systematic user co-creation approach integrating research and innovation processes in real life communities and settings. In the educational context, we engage the living lab methodology as a technique of crucial value in the heart of initiatives of open schools, which, in cooperation with other stakeholders, aspire to become agents of community well-being by creating new partnerships in their local communities.



Figure 3 The concept of schools as living labs being presented during the R4C 2021 online summer school

The summer school also presented the concept of Digital Media Literacy for Active Citizenship to promote critical thinking and democratic values. Digital advances have brought new challenges for Europe’s pupils, students and teachers. Algorithms used by social media sites and news portals can be powerful amplifiers of bias or fake news, while data privacy has become a key concern in the digital society. EU citizens, but above all young students are vulnerable to cyber bullying and harassment, predatory behaviour or disturbing online content.

Finally, the summer school discussed Biomimicry, an interdisciplinary approach that uses living organisms as a model to meet the challenges of sustainable development (economic, environmental and social). It presented ways for enhancing competences and awareness on biomimicry in the School Community, including students, parents, teachers and directors and Informal Science Education Providers, while reinforcing the sustainability principle in schools for the whole school community. Participants looked at how schools can be supported in using these tools to understand the current position of the organisation and build on the results to define and implement suitable action plans by applying a step by step support mechanism for school heads and teachers.

3.3 “Towards an Open and e-Mature School” Greek Summer School 2020

The course focused on the development of a roadmap for the schools of the participants, the use of reflection tools as a mechanism for monitoring the development of the school and the presentation of proposals for the design of innovative educational actions (fig.4). The more than 20 participants explored how schools can move from reflection to developing an integrated action plan for the "openness", the digital maturity of the school community.

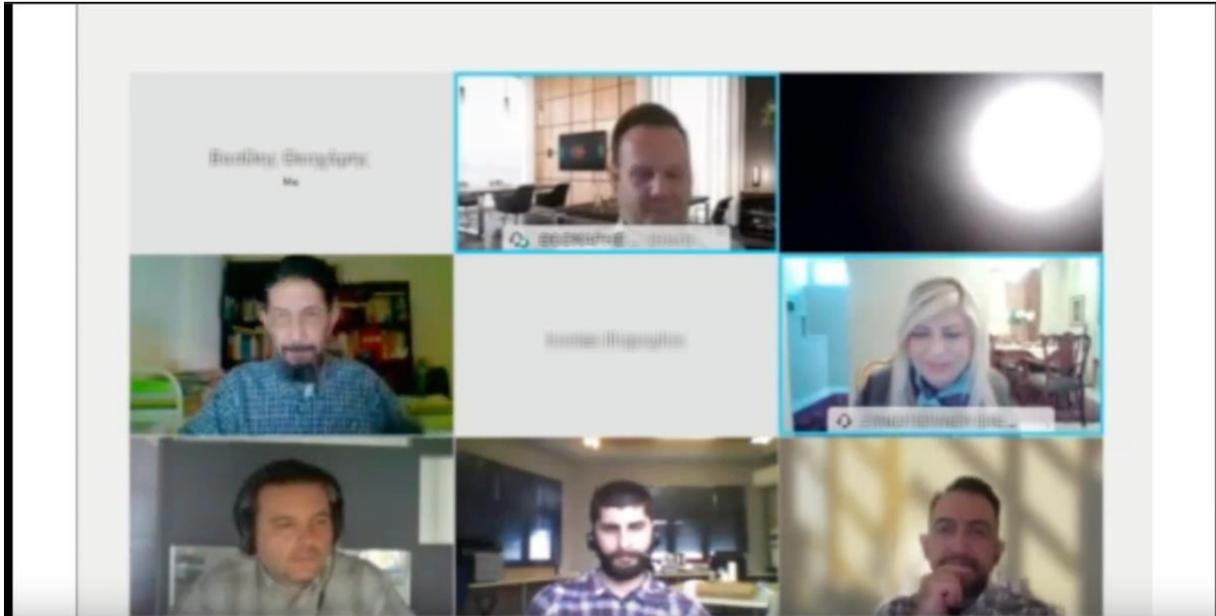


Figure 4 R4C road map for schools being presented during the R4C 2020 Greek summer school

"Openness" refers to the use of open educational resources and applications but also to the creation of a model of cooperation with external factors to the school that can support the educational work. Digital maturity refers to the adoption of technological applications that allow teachers and students to have continuous access to quality digital content, databases, virtual or remote laboratories and to continuously enrich the educational experience. The course took place on 13-17 July 2020 online.

4 School's Implementation Projects

In this chapter a series of project developed by schools in Greece, Italy and Portugal are presented. At the moment of the writing of this deliverable there were 126 projects already presented to the national coordinators. Schools are in the process of finalizing the projects and uploading them to the OSOS platform. Below we present a sample of the projects developed by the students with the support of their teachers. The projects are a mixture of student centred methodology where students have their learning experiences reinforced by technologies. In most of the cases there is a clear involvement of the school and local communities in the projects. Teachers engaged their students by using the Design Thinking Methodology. As presented in the chapters above this is the whole process was preceded by engagement of the schools, training and support actions. The result of their efforts is very encouraging and presenting clear evidence of the motivation of teachers and students and the long list of competencies acquired by educators and learners. A sample of the projects is presented below.

4.1 Vocational School Of Kalloni: Using Drone Technology For Environmental Awareness

Using unmanned vessels (Drones) technology and an open online flight planning program (<https://flylitchi.com/hub>), students created flight plans of areas of great environmental interest on the island of Lesbos (e.g Eressos Dam), in order to photograph and record these areas. The main purpose was to create photographic / video material to inform the general public about the existence of these areas and their continuous monitoring, by creating a file, for any changes and interventions that may be suffered by human factor or not, with the ultimate goal of protection and their promotion (fig.5).

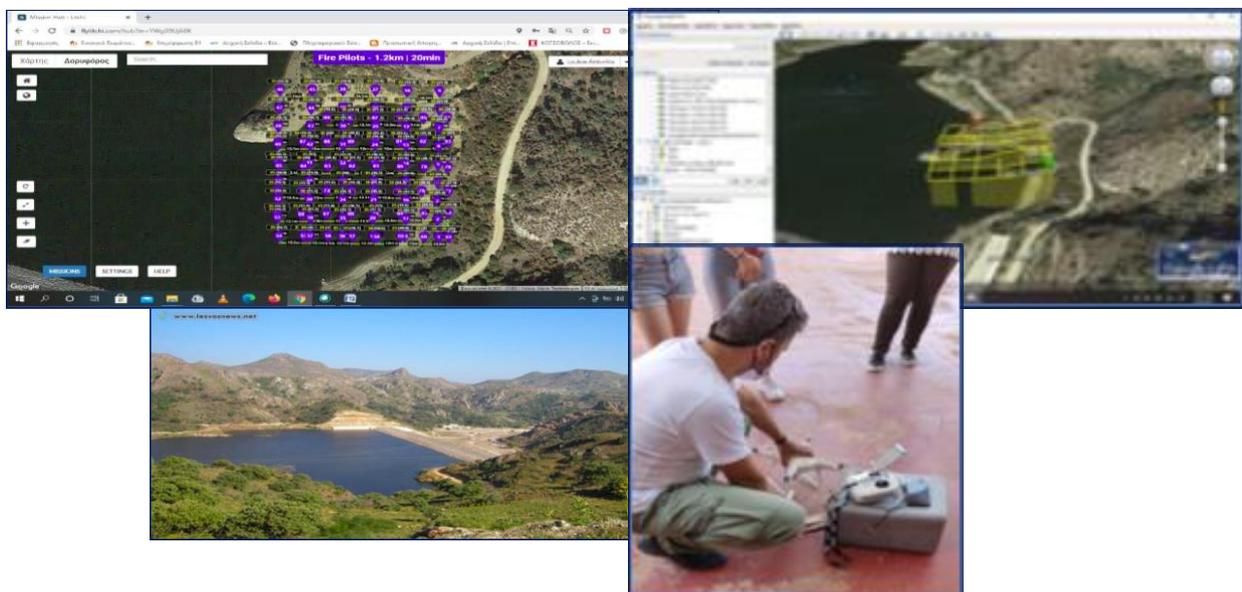


Figure 5 Images of the implementation of the project "Using drone technology for environmental awareness"

4.2 Schools Building Seismographs

Projects devoted to the constructions of simple seismographs and to share their data, improve awareness and safety during an Earthquake were also developed: The 42ns High School Kalamaria, using a Measuring Egelados' anger, build a digital seismograph (fig.6) and a simpler model capable of recording data for future analysis (fig.3).



Figure 6 Images of the construction of a digital seismograph



Figure 7 A simple seismograph capable of recording the data for future analysis

Students also created a seismograph to help them recognize when an earthquake is building up and provide instructions to take shelter (fig.8).



Figure 8 A seismograph acting as a prevention instrument

4.3 Data Pollution In The Digital Society



Figure 9 Illustration from the project devoted to data pollution

The IIS Manfredi Tanari Bologna, Italy School created a project devoted to handle the pollution caused by devices that process big data (fig.9). The students were divided into small groups and each group addressed a specific topic (Data Centre, Smart City Grid, etc.). Students got acquainted with how ICT has invaded all spaces and its impact on the environment. Students learned how we can offset the CO2 emissions with our daily activities by purchasing carbon credits that can be used to plant trees on Earth.

https://portal.opendiscoveryspace.eu/en/osos_authoring_tool/view/863556/860287

4.4 The Impact Of Covid-19 And Solutions Designed By Students For Their Community

DON'T TOUCH (7TH JUNIOR HIGH SCHOOL OF KALAMATA)

Preventing germ transmission. How to avoid contact with germs in gel dispensers. Students created a device with sensors that will release the gel upon the hand approach in the right direction (fig.10). (https://portal.opendiscoveryspace.eu/en/osos_authoring_tool/view/863748)

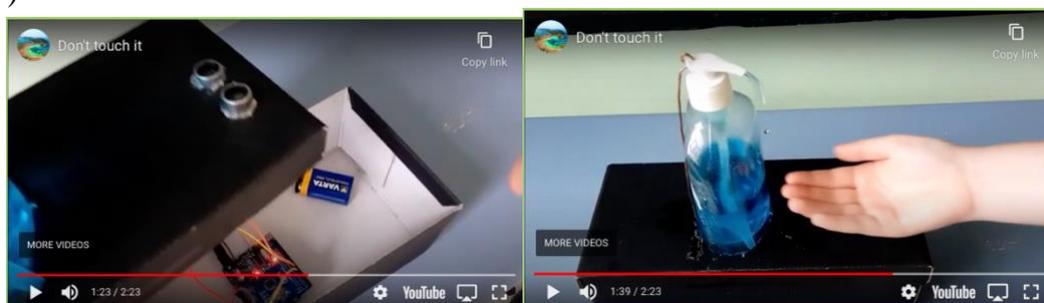


Figure 10 Images from the project devoted to the prevention of germ transmission



Figure 11 Images from the project "Learning about COVID-19"

Learning about COVID-19. Students as Journalists gathering, processing and sharing news for the community. This educational project was articulated in a flexible way through workshops in which the pupils had an active and participatory role aimed at the educational and didactic success of all, also promoting self-esteem. Students from the First Grade Secondary School have conceived and carried out, with the guidance of the class teachers, some in-depth video-journalistic activities, becoming protagonists, in the period of health emergency from COVID-19, of articles and personal interviews and to experts in the sector. With the help of digital communication that these days saw them engaged in traditional didactic lessons, the students experienced a new way of learning more about the COVID-19 pandemic (fig.11).

https://portal.opendiscovery.space.eu/en/osos_authoring_tool/view/863511

SOCIAL EFFECT OF COVID-19

Students from Colégio Júlio Dinis engaged in a mission to support the elders of the community to cope with the constraints imposed by the pandemic. They brainstormed on ideas that could fill the life of elders living in isolation in Nursing Homes. After a careful selection they created a kit full of engaging and fun activities. They have even recorded a choreography from a chosen music (by request of the elders living in the Nursing Home) for the elders to watch and replicate. They connected with this population online erasing barriers and involving them in games, dancing, theatre, etc. (fig. 12)



Figure 12 Illustration of the project dedicated to fight the social challenges from COVID-19

4.5 Climate Change, The Impact In Our Lives And Simple Ideas To Help Fight Its Causes

MY WARDROBE IS LEAKING WATER. WHAT ABOUT YOURS?



Figure 13 Illustration for the topic addressed by the project “My wardrobe is leaking water”

Creating awareness about the expenditure of materials and water when we purchase clothes and other goods. The project was inspired by an inclusive learning model focused on climate change and our ecological footprint, particularly regarding water (fig. 13). The main objective of this project was to create a broad awareness of the issues of nature conservation and recycling. In the case of this work students wanted to alert the community to habits and routines installed that can lead to a great increase in our ecological footprint, usually not conscious, because it is not evidenced and/or not directly visible.

The focus was on the consumption of water that is not seen, the invisible water footprint. The idealized process leads students to realize that they are part of the problem but are also part of the solution. The students concluded that on average, each student has the equivalent of a pool of 250,000 L of water at home (derived from the clothes in their wardrobe. This was the beginning of the campaign to raise awareness of the water footprint hidden in what we wear.

5 Conclusion

The main aim of Reflecting for Change engagement activities was to create a mechanism to empower educators to engage their students in innovative learning experiences while contributing to the modernization of their school. National coordinators supported educators and students to become change makers in their school and local communities.

The pandemic scenario required a quick reaction from the partners in order to adapt the project's methodology to the new global reality. As described in this document, this was achieved by the partners with the adoption of different strategies, adapted to the reality on each implementation site. Each country provided professional development opportunities to the teachers introducing them to state-of-the-art tools and resources to work online with their students while keeping the student centred approach. Students were introduced to the Design Thinking Methodology and have used it to materialize their ideas, most of them very in line with the needs of the school and/or local communities.

Schools were also supported to evaluate their level of adoption of digital tools and resources as part of the learning process and their collaboration with the community that they serve. The R4C engagement and implementation activities served as a very strong support to improve the scenario in each school that participated in the project.

National coordinators, headmasters, educators, learners and their families had the opportunity to exchange best practice and create a very nice set of projects that can now be adopted and replicated by other schools.

All the work performed by the schools will enrich the European School Innovation Map and will be certainly an opportunity for networking, to promote common project at European level and exchange of school staff for sharing experiences and best practices.