![R4C Reflecting for Change logo]

Deliverable 3.2

Training Materials and Online Support

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Abstract	This document describes the support materials for the school heads and teachers who were involved in the implementation and validation phase of the project. These materials acted as an implementation guide for the project's pilots in schools. On-line training sessions and on-line support were also offered to the project participants.
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Executive summary

The document presents the support materials for the school heads and teachers who are involved in the implementation and validation phase of the project. These materials act as an implementation guide for the project's pilots in schools. On-line training sessions and on-line support were also offered to the project participants. They include indicative scenarios, guides for the use of the R4C tools and services, and the new opportunities offered through the participation to the R4C school network and services to aggregate and connect content and functionalities customised to the personal needs of different types of users. These materials provide a roadmap on the power of communities that foster innovation in schools. They provide support on collaboration and exchange of ideas and best practices. They also provide support on the characterization of the participating schools and the development of school strategic plans as well as personalized roadmaps for teachers.

The first chapter provides an introduction to the pedagogical framework of the training material.

The second chapter presents the blueprint for the first initiation of the participating teachers to the R4C framework and implementation

The third chapter presents the dedicated material created by the National Coordinators (IEP in Greece, CITTA in Italy and NUCLIO in Portugal) for the different needs of the participating teachers.

The fourth chapter presents the training and support material of the two International Professional Development Courses in July 2020 and in July 2021

The fifth chapter presents the training material from synergies with affiliated projects

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1. Introduction

The training material provides participants, especially school leaders with a powerful framework to transform their school into an open school with special focus on the e-maturity of the institution. This transformation can only take place if a school connects to other schools as well as to the local community, businesses, and non-governmental organisations. Schools can form a hub together, in which they help each other, collect good practices and share their experiences. Such an open and curious environment will support the development of innovative and creative educational activities. The model takes school settings into account and therefore ensures that each school leaders can innovate in a way that is pleasant and suitable for their school.

The training material is built on the notion of open school doors meaning the school being open to welcome external actors, but also that professionals are ready to leave the comfort zone of the school premises, in collaboration with parents, families, local community actors, local businesses, cultural venues and others.

Open schooling, especially in the post-Covid period will encompass a growing level of digital technology use, making it necessary for schools to change their practices, and in the frame of open schooling also collaborate more with the business sector. This needs a high level of awareness of the benefits of digital technologies in all aspects of education in order to promote in all phases. School leaders need to be aware of possibilities and limitations with regard to digital infrastructure, digital teaching and learning platforms, digital devices and associated professional development. Collaboration in the framework of open schooling needs to prioritise the development of the digital confidence and competence of teachers and school leaders for digitally mature schools. This requires the school to become an open and collaborative learning organisations amid wider supportive digitally networked communities. Engaging stakeholders such as businesses, universities, families and youth organisations are crucial in increasing digital maturity, making use of local development opportunities that allow school leaders, teachers, students and parents to shape school and community life. This can help address the barriers to digital technology use for school leaders, teachers, students and families.

The training material will help the participants to:

- Understand the notion of open schooling
- Assess the local benefits and challenges of open schooling
- Design an open schooling project
- Take the leap from thinking about open schooling as a project to open schooling as a mindset
- Understand their own mindset, knowledge and possible prejudices with regards to open schooling partners
- Be able to assess the e-maturity of their school using existing tools and building partnerships with digital companies, providers, etc.

2. General Introduction to the R4C framework

The following constitutes a blueprint for the first initiation of the participating teachers to the R4C framework and implementation

2.1 Open schooling and e-maturity

2.1.1 Introduction to the course and the participants

Participants introduce themselves and discuss their expectations to the training

2.1.2 Understanding the notion and benefits of open schooling and e-maturity

To make sure that all participants have the same basic understanding of the key concepts, in this section the following questions are discussed.

- Do you know what open schooling is?
- Has your school ever tried to implement it? If yes, what were the main challenges?
- How do you think open schooling could benefit the (school) community?
- Do you know what e-maturity is?
- Has your school ever tried to implement it? If yes, what were the main challenges?
- How do you think e-maturity could benefit the (school) community?

2.2 How open your school is?

2.2.1 Assessing open schooling practices and obstacles in the participants' schools - the R4C Self Reflection Tool

In this section the participants receive an Introduction to the R4C Self reflection tool https://srt.reflecting4change.eu/.

2.2.2 Evaluating inspiring practices from local perspectives

In this section the participants are introduced to 3 inspiring practices, to help them understand the notion of open schooling and e-maturity through practical examples. During the analysis of these cases participants will also be discussing the issue of localization of practices.

Review of the 3 inspiring cases in the School Innovation Model (Design for Change, ECOWEEK, The Mind and Hand Initiative)

- Could you implement these, or something similar in your own context?
- What aspects of the projects would need to be changed to fit the local needs?
- What do you like/dislike about them?

2.3 Promoting change and digital innovation in your school Vision, values and ethos

Build your Digitally Mature School exercise: participants work in groups of 3-4 and build their ideal open school using material available (paper, boxes, building blocks). The artefact should explore the dynamics, issues, challenges, anxieties, etc. of working in an inclusive, digitalised school environment. Participants are asked to plan before they actually build and planning should be based on discussing these factors.

After the artifacts are ready, each group choses a spokesperson to present this, showing all built-in features. Other groups can ask questions for clarification and other group members can add ideas they miss from the presentation.

After all artefacts are presented, people reflect on learning points supported by the facilitator asking these questions:

- Did anything come as a surprise to you?
- Was there anything in other groups' presentations that you did not think about, but found especially important/inspiring?
- Was there anything you cannot identify, agree with or wouldn't feel comfortable about?
- What is compelling you to make change?
- What are the risks associated with change?
- What are risks associated with maintaining the status quo (i.e. making no change/doing nothing)?
- What vision and values currently underpin the work of the school?
- How will you need to extend/develop these to incorporate work with refugee families?
- Vision and values questions – what are the risks of not doing it?
- What time and capacity do you currently have?
- Will you need to create time and resources to help develop your work in this area?

2.4 Developing Digital Literacies

In this section participants will provide an assessment of their schools current digital literacy status through the discussion of the following questions.

- How confident are school staff in using digital technology, particularly social media, in a) their social lives? b) their professional lives?
- What do you know about working with social media platforms? Thinking about school/parent engagement: What are the potential benefits and affordances? What are the potential draw-backs?
- What steps could you take to exploit the benefits but avoid the draw-backs?
- If you have no 'in-house experts' how could you use your wider school community to help build knowledge and understanding of social media digital communication? How might 'digital champions' in your community help you to develop your communication work?
- In what ways could you use social media to support home/school interaction? Where would it be useful? Where would it not be useful? Who do you need to talk to find out?
- What training or development work will you need to do with school staff and parents to support development in this areas?

2.5 Drivers and risks of change vs. maintaining the status quo

To take the first step to realize needs in their own school, participants are invited to reflect on the difference between dream and reality. Compare it to the reality of your current school!

- How could you achieve the dream state?
- What would be the benefits?
- What would be the dangers?
- Who would you need to involve for a successful change?

3. Material from National Coordinators

3.1   Greece

IEP, as a scientific agency that provides support to the Minister of Education, Research and Religious Affairs on issues regarding primary and secondary education, post-secondary education, transition from secondary to higher education, teacher training, student dropout and early school leaving, has a long experience in the areas of Second chance education and in teachers training. IEP acted as the National Coordinator of the R4C implementation activities in Greece mobilizing its active school network. A series of webinars has taken place during the lifespan of the project. In order to support the participating schools, IEP has developed a set of material and guidelines:

- [Introduction to the R4C project](#)
- [Participation in the R4C implementation activities](#)
- [Timeline of implementation and guideline](#)
- [How to use the R4C tools](#)
- [How to use the R4C community services](#)
- [How to create online projects](#)
- [How to use the webservice of IEP](#)
- [Using STEM to teach mathematics](#)
- [Using digital tools to organize teaching](#)
- [Digital literacy: tools and best practices](#)
- [Dealing with misinformation in social media](#)

3.2   Italy

CITTA with its participation in the project and acting as informal education provider has established a strong network of more than 100 open schools in Italy. In these schools the student's projects are focusing on local needs and challenges and the cooperation with external stakeholders is the norm. In the framework of the project CITTA wants to assess the impact of this school-based culture on school performance and on students learning outcomes. This could have significant added value for the expansion of the network of open schools in Italy. In order to support the participating schools, CITTA has developed a set of material and guidelines:

- [Reflecting for Change for an open school](#)
- [Science Education for All: an active citizenship for social progress](#)
- [Innovative ideas for open school projects](#)

3.3. Portugal

The main teacher training was a certified 50 h course which aimed to:
- promote student-centered methodologies;
- introduce inclusion practices;
- support interdisciplinarity in the classroom;
- foster citizen responsibility among teachers;
- develop trainees' technological skills in order to promote technology-enhanced learning;
- help make a group reflection about each school and elaborate a plan of improvements.

The course contemplated 8 online sessions, autonomous work and the implementation of a project with the students.

During the first online sessions, the following topics were addressed and discussed among all participants: IBL (Inquiry Based Learning), Design Thinking, Open Schooling, inclusion and UDL (Universal Design Learning), interdisciplinarity, and citizen responsibility. Some resources were created for this purpose:

- a [presentation](#) with an introduction to these themes;
- an [activity](#) to help introduce teachers to UDL;
- Teachers were asked to prepare a presentation about UDL using this [template](#).

The sessions that followed allowed teachers to work together in groups and reflect on the way their schools functioned and how their community interacted with their schools. They also created a plan of actions that they considered could improve the way their schools worked. For this purpose, NUCLIO also created some resources and took the opportunity to introduce teachers to different apps that promote the use of digital tools and resources, such as the mentimeter, padlet, miro, google sharing apps:

- Teachers introduced themselves using [Padlet](#);
- Teachers used Mentimeter to express their [wishes](#), [main goals and difficulties](#), and their [dreams](#);
- [Presentation](#) explaining the development plans;
- Teachers brainstormed about the development plans using [Miro](#);
- Teachers worked together on a [Google Slides](#) to reflect about their school community;
- Teachers brainstormed about their school community using [Google Slides](#);

These actions were aimed to support the materialization of the schools' development plans and to enrich the process of self reflection of the school. It also had the purpose to help teachers mix the integration of innovative models to interact with the students and facilitate learning while working at a distance with them.

As part of the training course, teachers had to develop projects with their students, putting into practice the methodologies and approaches discussed at the beginning of the course. NUCLIO created a [template](#) for the teachers to give to the students so they could report on their projects.

The last sessions were dedicated to the teachers' presentations of their projects with the students and the sharing of experiences.

Students' projects were dedicated to the engagement of the community and students learned to use the Design Thinking methodology, with the support of their teachers and using digital tools, in order to materialize their community projects.

NUCLIO also promoted a short teacher training of 6 hours, divided into two sessions spaced in time. The first session had teachers reflect on their schools and community, and discuss possible actions that could be taken to improve the status. Teachers tried to materialize some changes and conduct some projects with students and were able to share their experiences in the second session.

LINKS

Link to the description of the main teacher training course on NUCLIO's site

https://nuclio.org/oficina-de-formacao-professores-e-alunos-do-sec-xxi-2021/

Link to the description of the short teacher training course on NUCLIO's site

https://nuclio.org/acao-de-curta-duracao-reflecting-for-change-design-thinking-na-educacao/

Link to the first session presentation

https://drive.google.com/file/d/1yMqBtW9YGxLm6E1zgcV4MC7F1_4d4imx/view?usp=sharing

Link to UDL activity:

https://graasp.eu/s/av46gg

Link to UDL template presentation PPT:

https://docs.google.com/presentation/d/1pY5jCzLmogKXmrljbhxAAoBO93kUVxF0/edit?usp=sharing&ouid=102566600090073116551&rtpof=true&sd=true

Teachers were invited to introduce themselves using padlet

https://drive.google.com/file/d/1WsFXEyZY1D0apQVsJ3tOlgiz7GtFF1IK/view?usp=sharing

Each teacher had the opportunity to manifest their wishes and views individually using mentimenter

https://drive.google.com/drive/folders/1lGLLisp65Pkw53mCum6uw_XWbl1az7ng

Their main objectives and difficulties

https://drive.google.com/file/d/15d_cNzxZfOPom1E4O19MdbTXNS4YHAQ2/view?usp=sharing

Their dreams

https://drive.google.com/file/d/1owFhmK8lOyYIoITyfkqWbBBlpWkdUBIP/view?usp=sharing

Development Plans Explanation

https://docs.google.com/presentation/d/1YBeIRaSiaa-iXvprrnFvs7Q2XlwKcSK_/edit#slide=id.p1

Google Slides: My school community - A minha comunidade escolar

https://docs.google.com/presentation/d/1oVGk8RoIaLVEkXu_FAn-WEhOJt3qMTK7/edit#slide=id.p1

Exemple for the MIRO board - Brain Storming on the materialization of the development plan

https://miro.com/app/board/o9J_lBgnXoI=/?invite_link_id=564677836277

Brain Storming for Reflection on my Community (schools worked in groups)

https://docs.google.com/presentation/u/0/d/1l2YIAxYiPiH372ZapRfxWCMrx8SpLsf1/edit?fromCopy=true

Design Thinking Template for Students

https://docs.google.com/document/d/1rkNWTo9LNSAehrxO7WK7FGnc4cKYdr5U/edit

4. Material from 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.

4.1 "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, providing tools and resources for innovative projects. The summer school took place 6-10 July 2020.
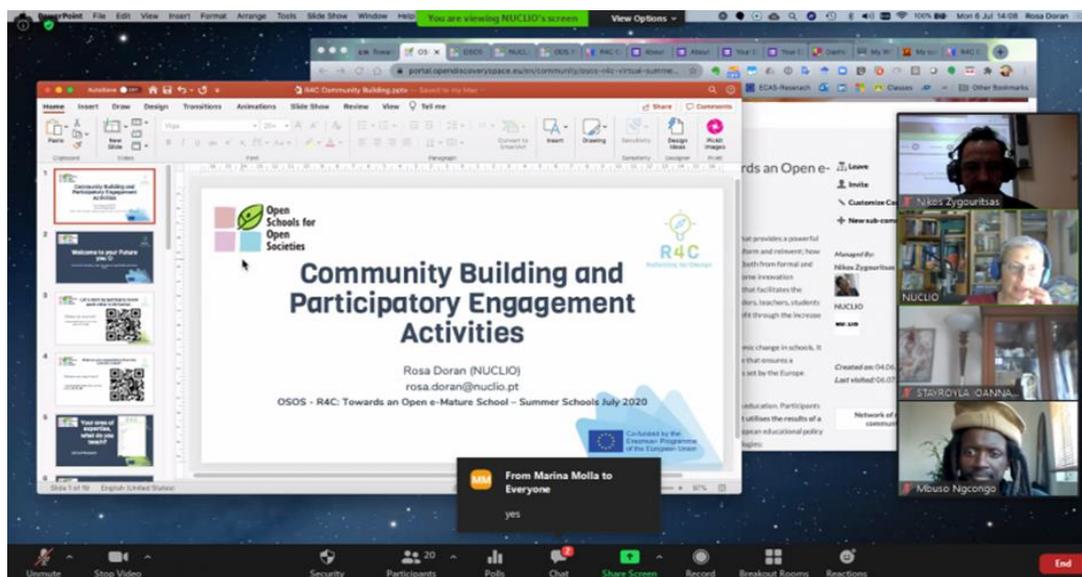
R4C community building being presented during the R4C 2020 online summer school

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
- The EU Digital Education Action Plan Snapshot

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.

4.2 "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 . 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.

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. In this link we have collected the recordings of all sessions of the summer school as well as all the presentations

5.   Material from synergies with affiliated projects

The R4C project through affiliation activities has created a European-wide network of interested schools/teachers, research institutions, and other stakeholders that were regularly informed about project developments, invited in project activities, exchanged results and to participated in events. The R4C project has collaborated with the following European funded projects in supporting schools and educators to foster school innovation on implementation level

DIMELI4AC

	R4C organized common training activities (webinars) with the Erasmus+ project DIMELI4AC which pioneers to develop pilot-test and evaluate a tool kit which supports schools to establish their own DIGITAL MEDIA LITERACY ACTION PLAN. Comparative Report: Digital Media Literacy at School DIMELI@SCHOOL Competence Framework: this instrument contains a list of specific skills that are considered essential to become a responsible digital citizen DIMELI@SCHOOL Learning Pack: collection of resources for the acquisition of Digital Citizenship skills

InSTEAM

	R4C collaborated with the Erasmus+ project InSTEAM and included the components of inclusion and STEAM education produced within the project InSTEAM in training activities. Several groups of teachers in Portugal used this approach to engage their students in the development of community projects related to Climate Change and the importance of recycling and renewable energy. implementation The InSTEAM project aims to create a series of learning resources that allow for more individualized, inclusive and personalized STEAM (Science, Technology, Engineering, Arts and Mathematics) learning. The goal is to establish pathways for inclusive, innovative and interdisciplinary environmental STEAM education that reduces disparities in access to and engagement with digital STEAM education. inSTEAM inclusive learning scenario in the form of Inquiry Learning Spaces (ILSs)

Raising awareness about natural disasters through the development of best practices and serious games (rAn)

	R4C collaborated with the Erasmus+ project rAn in providing to schools and teachers innovative resources to develop projects that address their needs based on the R4C School Innovation Model. Schools opted to the topic of natural disasters taking advantage of the resources produced within the Raising Awareness for Natural Disaster Project. The rAn project aimed at assisting children at primary education to cope with emergency situations, by developing a serious game for raising their awareness about natural disasters and emergency preparedness. The main objective of the game is for the player to survive a disaster and develop a resilient community in view of periodic geological hazards. The serious game is based on a dynamic storyboard supported by interactive elements such as quizzes, puzzles and mini-games. Along with the serious game, rAn developed a Facilitator's Guide which provides a full overview of all the serious game features. rAn Learning Methodologies Framework

Polar Star

POLAR STAR	R4C collaborated with the Erasmus+ project in providing ideas and resources to schools resources to develop projects that address their needs based on the R4C School Innovation Model. The Polar Star description for STEAM interventions was the choice of teachers that took the astronomy route as a means to promote interdisciplinary learning opportunities for the students while developing their community interventions. Polar Star brings together state-of-the-art learning pedagogies and combine them with exciting activities that focus on contemporary science, thus helping teachers to introduce STEAM successfully in their class. At the same time the project focuses on the development of students' key skills and competences as well as deepening their knowledge of fundamental science principles, increasing their appreciation of science and technology and their role in todays' societies. The project team combines innovative learning techniques like inquiry learning and the design thinking approach along with other cutting-edge educational tools into one seamless methodology, that will allow teachers to shift towards a student-centered type of teaching. Polar Star Training Materials Polar Star Assessment Toolkit Polar Star activities kit

Space EU

SPACE EU	R4C collaborated with the Erasmus+ project Space EU on the exhibition **"Step into Space" which**opened its gates to students and teachers of all levels from Monday, November 23, 2020. It presents key points of space conquest, the applications of space technology in our daily lives, how satellites are used for monitoring weather phenomena, the natural environment and the impact of human activity and much more. We talk to visitors about spacecraft traveling beyond the boundaries of the solar system in search of new worlds. How could we communicate with them? In which language; Young visitors are invited to design the cover of their own space science magazine at the end of the visit. Selected covers will be permanently "installed" in the virtual exhibition. The experience of visiting the virtual world can be transferred to students via the internet using a communication platform. The duration of the visit is from 45 to 60 minutes. The virtual world exhibition can be found in Second Life at the address: https://maps.secondlife.com/secondlife/DBC%20Research/119/240/26 R4C has offered guided tour to schools via the Webex communication platform (invited by educators as speakers / guides through their school accounts) or via the Zoom platform. spaceEU is a European-funded project that fosters a young, creative and inclusive European space community spaceEU implements an exciting space outreach and education programme to spark the interest of young people in STEAM (Science, Technology, Engineering, Arts and Maths), and to encourage them to consider space-related careers. The project inspires and broadens young minds, develops a sense of European and global citizenship, and through our shared human relationship with space, fosters long-term partnerships between people from different countries and cultural

	backgrounds. spaceEU also lays the groundwork for the possible future establishment of a Knowledge Innovation Community (KIC) in the field of space.
	Space EU Engage with Space Toolkit
	Space EU Guide to Engage Young People