



CORDIS Results Pack on **open schooling**

A thematic collection of innovative EU-funded research results

February 2024

Paving the way for innovative educational contexts in the EU



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Revolutionising education through the transformative power of STEM

Editorial

If one thing is certain in our rapidly changing world, it is that transformation now takes place on a much deeper level, considering all the new branches of activity that are created every day. The challenge of keeping pace with all these changes is particularly acute for the education sector. The nine EU-funded projects featured in this Results Pack focus on fostering an open learning educational ecosystem that will equip students with all they need to navigate their life today and anticipate future advances.

Today's schools mostly lack the methodologies and practices required to meet the diverse needs of 21st-century learners. New skills such as problem solving and critical thinking and fields such as computer science, AI, engineering, the green transition and environmental awareness demand that students fully immerse themselves in the new knowledge instead of being passive recipients of it. Within this context, education requires a major overhaul. For students to thrive in an ever-complex society, their learning must take place in the real world: the home, the community, the museum, the lab, the park; competence-based education cannot be confined within school walls.

It is becoming more evident that the solution lies with open schooling, which encompasses an entirely different approach to 'what', 'where' and 'when' people learn. Open schooling invites policymakers, schools, parents, community, academia and enterprises to become collaborators in reshaping the educational experience and transforming the way students learn, at the same time strengthening the link between learning and society.

Spotlight on open science education in the EU

Pursuing science careers, especially, is proving to be a challenge, particularly for young people, but also other groups based on gender, socio-economic or geographical status, who find themselves [underrepresented in STEM \(Science, Technology, Engineering and Math\) careers](#). These groups often need further encouragement to be able to shed their indifferent or negative attitudes towards science.

To address this issue, the EU is working on increasing the uptake of science studies and citizen science initiatives to reignite interest in science-based careers, promote scientific literacy, and improve employability and competitiveness. Initiatives such as the [European Year of Skills](#), for example, aim at boosting the EU skills strategy by focusing on digital and green technology skills.

Furthermore, EU-supported efforts such as [Open Schools for Open Societies](#) bring together partners from a variety of disciplines under one collaborative hub focused on an inclusive and holistic approach to science innovation. The European Policy Brief '[Innovating European Education: Open Schooling as a Boost for Europe's Skills](#)' is one of the key results produced by the EU-funded projects [Make It Open](#) and [SALL](#), in the frame of the [Ostotogether network](#), working on pioneering science education practices.

Fostering inclusiveness in science education

Social realities in Europe restrict equal access to scientific knowledge.

The EU-funded C4S project presented a set of practical tools and resources for quality non-discriminatory education.

Science education activities are all too often undertaken without considering issues of exclusion, stereotyping and even segregation. As a result, EU citizens from diverse backgrounds, children included, have restricted access to scientific knowledge or are given visibility as expert scientists, thus limiting their role as social referents.

The EU-funded [C4S project](#) explores the relationships between science and society by focusing on communities in vulnerability risk situations to ensure their visibility, fair representation and equal access to science. It also seeks to improve the knowledge base on inclusive science education through research pilots undertaken in six local hubs.

Working with diverse vulnerable communities

The C4S project built six local hubs in [Brussels](#), [Budapest](#), [Manresa](#), [Milan](#), [Sofia](#) and [Vienna](#) to boost Inclusive Science Education (ISE) initiatives in the different local territories.

C4S aimed also at giving support, visibility and a voice to experts from different target communities. This was achieved through its website and social networks, as well as workshops and seminars to create awareness among teachers and educators about the benefits of ISE issues.

The hubs had different pilot activities to gather data about different possible ISE activities and pedagogical strategies, and to see how the different community living labs impacted the territory with the interventions of children and youth.

“We learned that deploying a project is not only about doing things. It is also about learning how to co-construct a human



© C4S

team that believes in such a project and all the things that it involves,” says project coordinator Gabriel Lemkow Toviaş.

He continues: “Also, we had to learn to unlearn. We had to learn how to detect barriers existing towards different communities, that we so often assumed as natural and invisible to us, and how to overcome them.”

Raising institutional awareness about inclusive science education

“One of the aims of this C4S project was to obtain results from our pilots and to learn from our different local initiatives so as to be able to transfer them – or facilitate their transfer – to other EU



We hope that all these outputs will be used and be of reference for the years to come, allowing us to continue to push for a fairer, more equitable and co-participatory approach to science education.

realities and communities in vulnerability situations,” states Lemkow Tovas. “We do hope that this is going to happen after C4S ends and also that such transference will have a real impact,” he adds

When conducting activities, the C4S team tried to make as much impact as possible rather than focusing on theoretical discussions. To do so, they devised the publication of a ‘Style Guide on Inclusive Science Communication’ addressed to journalists and communicators interested in making a more inclusive type of journalism and science communication.

Moreover, they elaborated the publication of a *White Book* on ‘Inclusive Science Education’ especially addressed to policymakers, institution representatives and educators. This in-depth resource provides recommendations and roadmaps to implement changes that would have a real impact in terms of boosting ISE initiatives relating to policies, institutional and pedagogical interventions.

Finally, the C4S team launched an [International Observatory on Inclusive Science Education](#) to provide a stable and powerful platform to continue our research and dissemination of ISE initiatives and resources.

“We hope that all these outputs will be used and be of reference for the years to come allowing us to continue to push for a fairer, more equitable and co-participatory approach to science education,” concludes Lemkow Tovas.

PROJECT

**C4S - COMMUNITIES FOR SCIENCES (C4S)
Towards promoting an inclusive approach
in Science Education**

COORDINATED BY

Fundació Universitària del Bages in Spain

FUNDED UNDER

H2020-EU.5. - Science with and for Society

CORDIS FACTSHEET

cordis.europa.eu/project/id/872104

PROJECT WEBSITE

communities-for-sciences.eu/



Making the connection between science class and the real world

The EU-funded CONNECT project provides hands-on activities for students to explore daily life through the lens of science.

Adopting open schooling in formal education and making it more widely accessible is an effective way to motivate and encourage young people to pursue science careers and to develop positive attitudes towards jobs in science, technology, engineering and mathematics (STEM). However, this is a challenge for students whose interest is limited for various reasons, such as a lack of role models and few opportunities to participate in science beyond the classroom.

Science in action

To address this issue, the [CONNECT](#) project applied the so-called [CARE-KNOW-DO](#) approach. Ultimately, the aim is to provide more opportunities in school curricula for students to 'care' about social issues that relate to science and would like to 'know' more about. Lastly, they 'do' something by taking action.

"We encouraged students to identify real-world problems they care about and apply scientific knowledge to solve them collaboratively," says CONNECT coordinator Georgios Kolionis, research project manager at [EXUS](#), an enterprise software company based in Greece. "This involved integrating projects into existing science curricula and engaging families, universities and enterprises in participatory science activities."

Building science capital

CONNECT focused on about 30 000 students in Greece, Spain, Romania and the United Kingdom, as well as Brazil. Over 1 000 teachers and more than 100 schools participated. Nearly

17 000 students completed all open schooling activities and evaluation procedures.

Specifically, students and STEM professionals discussed and addressed real-life problems involving scenarios related to six areas: health and food; technologies; energy; environment; science-society; and climate change. By using knowledge and skills acquired with the help of teachers, students then received support from STEM professionals and family members to carry out practical solutions. Such actions will result in a positive impact for the students themselves, their communities and society overall.



We encouraged students to identify real-world problems they care about and apply scientific knowledge to solve them collaboratively.

For example, to learn about the problems concerning plastic pollution, over 6 000 students collected and recorded plastic waste from their surroundings. This activity was enriched by an [interview](#) with Richard Thompson, one of the foremost experts on plastic pollution who first used the term microplastics.

Making science open, accessible and engaging

A [platform](#) enabled teachers and STEM professionals to collaborate in creating science action projects.

Several other valuable resources are also available. These mainly include [best practices](#) involving face-to-face and remote educational tools, and [videos](#) with project information and tutorials, as well as work done with schools and students.



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In mid-2023, a [book](#) was published with principles, practices and tools to boost students' confidence in using science in their lives and careers.

To ensure greater scalability, CONNECT initiated the Open Schooling Declaration (OSD) to raise awareness about open schooling's importance, objectives, methodologies and relevance. It is comprised of 12 global principles, 14 recommendations and 40 actions. The OSD was presented at the United Nations Sustainable Development Goals Summit in September 2023.

"CONNECT is transforming teaching practices by empowering teachers to design student-centred lessons that foster active participation, collaboration and co-creation of knowledge," concludes Kolionis. "Through meaningful interactions with various stakeholders, students are becoming equipped with the skills, knowledge and mindset necessary to thrive as lifelong learners and professionals in an ever-evolving world."

PROJECT

CONNECT - Inclusive open schooling through engaging and future-oriented science

COORDINATED BY

EXUS in Greece

FUNDED UNDER

H2020-EU.5. - Science with and for Society

CORDIS FACTSHEET

cordis.europa.eu/project/id/872814

PROJECT WEBSITE

connect-science.net/



A science education model to navigate our fast-changing society

Gaps between schools and current society prevent many young students from perceiving science education as relevant to their lives. EU researchers produced frameworks to regenerate science education and bridge this chasm.



The challenge was to outline a model that could trigger, through an epistemological regeneration, a political, institutional, practical and personal-cultural transformation of our educational systems.

In the turmoil of our fast-paced world, our educational systems often remain rigid or strive to keep up with the pace of change. The EU-funded [FEDORA](#) project explored how secondary school students can develop the necessary competencies for navigating a complex, fragile and fast-changing society through education.

“The challenge was to outline a model that could trigger, through an epistemological regeneration, a political, institutional, practical and personal-cultural transformation of our educational systems,” notes project coordinator Olivia Levrini.

Obstacles in science learning today

Initially, FEDORA acknowledges three main inconsistencies. There is a clear contrast between the vertical and hyper-specialised organisation of teaching in disciplines and the inter-multi-transdisciplinary character of innovation. This clash becomes evident also within the context of the attempts to transform research and science into open and collaborative spaces.

Another mismatch regards the formalised and exclusive languages used in schools; there is a need for new languages to enhance imagination and the capacity to talk about contemporary challenges.

Finally, there is a discrepancy between atemporal or historically oriented teaching approaches and the need to support the young to construct visions of the future that empower actions in the present.

Building a new science education ecosystem

The FEDORA team re-formulated these inconsistencies into three research pillars, built respectively on the following themes: [inter-disciplinarity](#) in STEAM (science, technology, engineering, the arts, and math) education, [new languages](#) to spark creativity and imagination in science education and [future thinking development](#) through science learning.



Their work resulted in three frameworks that pointed out the main issues related to the tackled dissonance and elaborated specific [recommendations](#) for both open-schooling networks and policymakers, consistent with the results of a relevant [Delphi study](#).

The engagement of policymakers in the research process has been a challenging yet innovatively fruitful action; the team regards policy as an important area for implementing the project results as well.

These recommendations were then turned into design principles, operatively enacted through the 18 'implementations' that took place in two rounds in open-schooling networks in Bologna, Helsinki and Oxford.

FEDORA engaged, in its implementations, more than 300 secondary school students, 50 teachers, 40 researchers and a variety of other stakeholders in a diverse set of learning environments including schools, universities, teaching-learning centres and museums.

Fostering creative thinking and foresight

"We needed to create, in our consortium, an interdisciplinary boundary zone and inhabit this space as 'epistemological nomads,'" adds Levrini. "We needed to recognise the boundary objects, create a vocabulary for naming boundary-crossing mechanisms and learn to speak an interdisciplinary language

among ourselves, as well as a 'futurising language', one that could spark creativity and imagination."

The researchers elaborated on the importance of keeping together and balancing 'sense-making skills' (such as systems, critical and analytical thinking), and 'strange-making skills' (creative, imaginative and anticipatory thinking, the sense of 'feeling at home' and 'accepting the risk to go out of your comfort zone').

The team now aims to design an assessment approach that can be consistent with FEDORA's educational model, aligning political, institutional and practical choices.

PROJECT

FEDORA - Future-oriented Science Education to enhance Responsibility and engagement in the society of Acceleration and uncertainty

COORDINATED BY

Alma Mater Studiorum - University of Bologna
in Italy

FUNDED UNDER

H2020-EU.5. - Science with and for Society

CORDIS FACTSHEET

cordis.europa.eu/project/id/872841

PROJECT WEBSITE

fedora-project.eu/



Schools, local communities team up for better science education

The EU-funded Make it Open project introduces new teaching resources that enable students to learn, be aware of and engage with science around societal challenges.

Equipping students with the right knowledge and skills for the 21st century remains a challenge for mainstream education. Open schooling can help overcome this challenge by providing tomorrow's citizens with the competences needed to critically assess scientific news sources, and to make fact-based decisions and informed choices.

New educational ecosystem

But first, education needs to become more hands-on and linked to real-world issues. Open schooling fosters collaboration between schools and local communities by carrying out real-life experiments. This empowers students to make choices about their own learning. Families are also encouraged to become partners in this learning process.



To make a real change you need to engage the changemakers – the teachers.

“To make a real change you need to engage the changemakers – the teachers,” says [Make it Open](#) project coordinator Maya Halevy, director of the Bloomfield Science Museum in Jerusalem. “We looked at the role of teachers and developed scaffolds for them to adopt and adapt the approach, the pedagogy and the tools that can help them exploit the opportunities in their community.”

Learning by doing

Together with teachers, the [project partners](#) created [16 modular learning scenarios \(LSs\)](#) and accompanying lesson plans that involve solving problems in science, technology, engineering, arts

and mathematics. Translated into 10 languages, the LSs consist of nearly 140 independent learning units. Teachers successfully tested the lesson plans in 150 primary and secondary schools in Greece, Spain, Hungary, the Netherlands, Poland, Portugal, Romania, Sweden, Israel and the United Kingdom.

Each LS fosters creativity, critical thinking and engagement. For example, students in the Polish city of Łódź tackled air pollution by developing instruments to measure their surroundings and collect data. As a result, they gained a deeper understanding of what pollution is and how the atmosphere can be polluted. The students shared their findings through an awareness raising campaign and encouraged parents and residents to take public transportation, carpool and cycle.

To introduce open schooling in the 10 participating countries, the project team formed hubs led mostly by science centres, museums and other non-formal learning organisations. The hubs helped schools to form partnerships with parent organisations, non-formal



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science education organisations, civil society, enterprises, research labs and local authorities, among others. They offered training, meetups and bootcamps to properly apply the resources.

Navigating the world of open schooling

A [toolkit](#) offers guidance and support in leveraging the potential of Make it Open tools. [Information packs](#) are available for teachers new to open schooling. They can learn about the benefits and how to begin exploring open schooling practices in their schools or communities. A free [massive open online course](#) was also designed to introduce teachers and educators to open schooling ideas and pedagogy.

The [Open Schooling Navigator](#) is an interactive online platform that contains all project resources. Users can copy, redistribute and adapt the materials to meet their needs.

“Tangible, usable, attractive and flexible tools can lead to a change in learning towards open schools, but it is not enough,” concludes Halevy. “To mainstream the open schooling approach, we need to redefine the role of teachers, change regularities, create a community of practice with researchers and lobby ministries of education to embrace it.”

PROJECT

Make it Open - Make it Open

COORDINATED BY

Bloomfield Science Museum Jerusalem in Israel

FUNDED UNDER

H2020-EU.5. - Science with and for Society

CORDIS FACTSHEET

cordis.europa.eu/project/id/872106

PROJECT WEBSITE

makeitopen.eu/



Building open schooling communities across Europe with sustainability projects

EU-funded project MOST provides tools and skills to develop open science education for students and citizens, establishing a European open schooling network.

Education has the power to provoke real and profound changes in society, and shifts in learning methods have been debated to provide the skills and knowledge necessary for the current and next generation of students. For instance, a [UNESCO report](#)

traces a new social contract for education that can prepare society for future challenges. Part of this includes a move towards more collaboration between schools and communities.

Creating future problem solvers through outdoor education

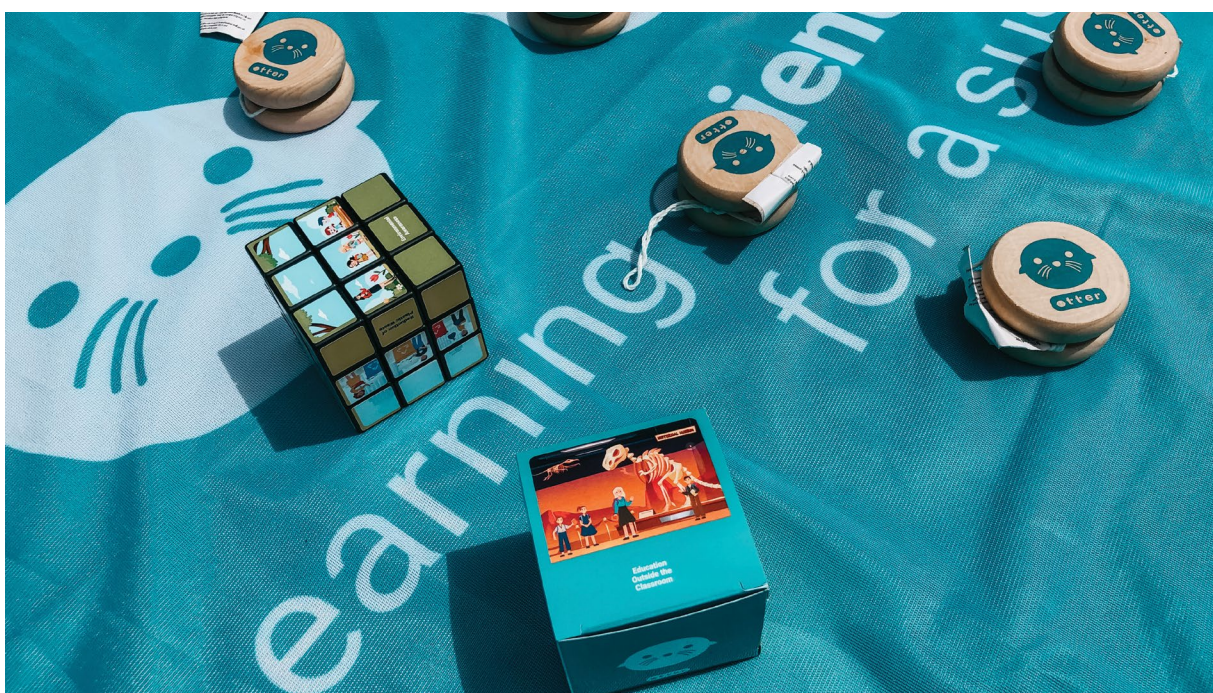
Can science be fun? Creating the ideal conditions for students to become conscious about sustainability, the EU-funded OTTER project makes learning outside the classroom a reality.

Inspiring young people to study science remains a challenge. In today's schools, STEAM subjects are still perceived as difficult. The traditional and theoretical models of teaching are not always designed to be engaging.

Aiming to change this perception, the EU-funded [OTTER](#) project brought together educators, scientists and creatives to co-design new education outside the classroom (EOC) experiences focusing on [environmental sustainability](#) and [reduction of plastic waste](#).

Shaping the Education Outside the Classroom methodology

The OTTER Lab methodology was initially ideated as a five-step approach that adopted student-centred pedagogies and was designed by the teachers, with support from the OTTER team representatives, in four pilot countries: [Ireland](#), [Spain](#), [Hungary](#) and [Finland](#).



Teachers were prompted with training materials to design engaging learning experiences that had strong links between the [OTTER lab design](#) principles – Sustainable Development Goals, 21st century skills as well as inclusion and diversity – and their countries' curricula.

The experiences centred around visits to sites outside the classroom to collect evidence related to their OTTER lab objectives. The teachers included elements of pre- and post-learning to support EOC visits.

The novel aspect of the OTTER approach was the use of the evidence collected off-site to generate youth 'Make an Impact' initiatives.

"OTTER used evidence-based methodology, blending literature insights with practical experiences across very diverse socioeconomic educational contexts," explains project fellow Nathália Helena Azevedo. "Based on the inspiring projects developed by students during OTTER labs, using similar methodologies as a scaffold can be a pathway to encourage imagination, collaborative projects within school communities, and reflection on interconnectedness among humans, other species and environments."

Assessment as integral part of research and educational excellence

A key objective of OTTER methodology was to establish a continuous monitoring and evaluation process instead of a single intervention. Assessment tools served a dual purpose – both informing research outcomes and contributing to students' learning. In addition to enhancing the research process, this integration also provided valuable insights for educators.

"Our results also show that this approach requires specific and targeted teacher professional learning. Planning and preparation would need to be supported with time – specific blocks in the timetable or substitution cover – and resources such as sustainable equipment that can be used across classes and subjects – for schools so that teachers and stakeholders can collaborate and design rich learning experiences," points out project fellow Deirdre O'Neill.

"We would like to see incentives to attract industries, communities and school leaders to buy into this approach and provide their full support to teachers."

Shifting the education ecosystem

Drawing on the findings of the project, a draft protocol for assuring the quality of EOC activities will be developed to create an accreditation framework for such activities.

"We intend that the guidelines help accreditation stakeholders to set up an EOC accreditation system. This will provide information point by point on who and what is to be accredited, why an organisation should apply for accreditation, the parameters to be assessed, post-accreditation development and maintaining the accredited status," concludes project coordinator Jelena Kajganovic. "We aim to build an education ecosystem in Europe across a diverse set of places, promoting quality education for all."



We aim to build an education ecosystem in Europe across a diverse set of places, promoting quality education for all.

PROJECT

OTTER - Outdoor Science Education for a Sustainable Future

COORDINATED BY

Geonardo Környezetvédelmi, Térinformatikai és Regionális Projektfejlesztő Kft in Hungary

FUNDED UNDER

H2020-EU.5. - Science with and for Society

CORDIS FACTSHEET

cordis.europa.eu/project/id/101006482

PROJECT WEBSITE

otter-project.eu/



Open school project fosters science cooperation on challenges faced by cities

EU-funded project PULCHRA involved more than 2 800 students from 10 countries in science learning, approaching education beyond school walls.

In an increasingly complex world, science education is paramount to prepare young people for a future with challenges related to modern technology, environmental and climate issues. To improve learning processes beyond school walls, scientists believe that engaging communities can lead to knowledge becoming action.

This open school concept was explored in the EU-funded project [PULCHRA](#), which aimed at creating new partnerships in local communities to foster science education for all citizens. The project involved 12 partners and focused on ‘cities as urban ecosystems’, developing a programme that encompassed environmental and socio-economic topics.

“The process of learning must integrate the different environmental and socio-economic data and be holistic in terms of a continuous endeavour, which is not limited to learning situations set in schools. It should be augmented by opportunities to explore, test and even implement science concepts in real life,” argues Constantinos Cartalis, PULCHRA project coordinator.

Putting problem-solving skills into practice

To encourage participants to become agents of community well-being, PULCHRA was organised around pilot themes. Named city challenges, these are projects developed by students on six topics linked to the [UN Sustainable Development Goals](#): powering cities without harming the climate; buildings for the

future cities; regenerating urban space to connect people in a healthy environment; from waste disposal to resource efficiency – circular economy at the city scale; mobility patterns that support community development and innovation for social and environmental benefit.

“While these are complex challenges requiring interdisciplinary approaches, students alongside their community achieved fantastic results. They designed the regeneration plans of their local areas, giving weight to nature-based solutions and the greening up of urban space, changing mobility patterns to reduce CO₂ emissions, promoting energy efficient buildings, and raising awareness of resource efficiency. In practical terms, they managed to approach the cities as urban ecosystems,” says Cartalis.

Divided into science teams, students had the support of PULCHRA members and exterior stakeholders, such as universities, research centres, public and private companies and central and local government bodies as well as NGOs and families. The projects were then presented to the local communities through open workshops.



The process of learning must integrate the different environmental and socio-economic data and be holistic in terms of a continuous endeavour, which is not limited to learning situations set in schools. It should be augmented by opportunities to explore, test and even implement science concepts in real life.



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The city challenges successfully involved 2 834 students aged from 12 to 18 years old, 235 teachers and around 300 stakeholders in 10 EU countries – Czechia, Germany, Ireland, Greece, Italy, Cyprus, Latvia, Poland, Romania and Sweden.

Open schooling benefits

The project was fruitful in its multidisciplinary approach, covering 21 different teaching subjects. The city challenges adopted a series of education methods, such as problem-based and experiential learning. Students had the opportunity to collect data in the field and in a lab environment, to use different tools, questionnaires and chemical analysis kits, to perform descriptive research and to promote interactive experiences with the communities.

PULCHRA's open schooling method was positively seen by all participants. "Students emphasised that 'learning by doing' should be one of the prime teaching methods, while they heavily appreciated the contribution of experts and stakeholders to increase their knowledge and motivation," states Cartalis. Teachers also highlighted that both experts and stakeholders enhanced the know-how, creativity and interest of the students.

According to these results, educational systems in Europe should further integrate the open school concept. "An additional recommendation is to link educational practices and products to the Sustainable Development Goals to provide the educational community an integrated framework for action," adds Cartalis.

PROJECT

PULCHRA - Science in the City: Building Participatory Urban Learning Community Hubs through Research and Activation

COORDINATED BY

National and Kapodistrian University of Athens
in Greece

FUNDED UNDER

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CORDIS FACTSHEET

cordis.europa.eu/project/id/824466

PROJECT WEBSITE

pulchra-schools.eu/



Expanding science education beyond school walls

By linking communities and schools, a European project envisions impactful learning experiences beyond traditional classrooms.

Open schooling constitutes a diverse educational approach that extends learning opportunities beyond traditional classrooms, transcending barriers of time and access. This open approach not only fosters scientific literacy among students but also encourages them to pursue careers in science.

Despite the support from national and local educational authorities, a cohesive connection between schools, communities, museums and workplaces is currently lacking. Bridging this gap demands coordinated international efforts over time, reflecting the notion of opening schools to society.

Engaging students with the wider community

The EU-funded [SALL](#) project aims to advance open schooling by fostering collaboration in science education, envisioning schools as living labs integrated within society. The goal is to encourage schools to cooperate with stakeholders and create new partnerships in local communities, enhancing overall well-being.

SALL builds upon the foundation laid by the [OSOS](#) project, the influential EU-funded project that pioneered the concept of open schooling. OSOS demonstrated how involving local communities in the teaching and learning process can drive inclusive and innovative societies. This involvement allows students to obtain a better understanding of global and local challenges as well as the relevance of science and technology in addressing them.

"The ultimate goal is to enhance students' problem-solving and collaboration competencies, making science education more relevant and inclusive," states project coordinator Pavlos Koulouris.

At Makrygialos Primary School, Greece, students engaged in a living-lab school project on mussel farming, accompanying farmers on a boat out to sea and witnessing firsthand the impact of climate change on the local environment. This experience highlighted how such farming can sustain ecosystems and supports livelihoods, emphasising the critical link between the environment and community welfare.



The ultimate goal is to enhance students' problem solving and collaboration competencies, making science education more relevant and inclusive.

Living lab methodology

The SALL team co-created the living lab methodology as a technique for the development of open schooling activities linked to science learning in Europe's schools. Hundreds of teachers and schools across Europe enthusiastically adapted the methodology to suit their own needs and circumstances, generating inspiring school projects.

SALL living-lab projects revolve around real-life problems drawn from students' experiences, working closely together with societal actors from the local community. Initially focused on food topics, these activities progressively expanded to all thematic areas, including green and digital issues.

The portfolio of SALL projects offers rich inspiration for those embarking on their own open schooling journey. It showcases examples from projects that have been implemented in schools across Europe, ranging from school gardens and promoting greener local food production, to analysing [eating behaviour](#), [composting food waste](#) and [protecting wildlife](#).

by integrating these four disciplines into the curriculum. It often incorporates hands-on experiential learning, fostering teamwork among students. The primary objective of STEM education in schools is not merely to ensure proficiency in these subjects but also to empower students to apply their knowledge in practical and innovative ways.

An integral European STEM resource hub

To effectively teach STEM subjects, educators require continuous training and professional development. The EU-funded [Scientix 4](#) project is dedicated to supporting European teachers and stakeholders in STEM education through a range of activities, resources, events and training courses.

Over its 12-year evolution, Scientix has established a robust science education community in Europe. By refining its services and activities, it has successfully built a reputation as a key EU STEM education institution. This progress has been supported by various European ministries of education in conjunction with a range of EU and privately funded initiatives.

Project coordinator Agueda Gras-Velazquez remarks: "These 12 years have led to Scientix becoming Europe's largest network of STEM education professionals, and to the project now being independent and sustainable."

Scientix offers an extensive and centralised repository of teaching resources comprising hundreds of learning scenarios, research articles and practical resources. Collectively, these resources aim to expand pedagogical horizons and improve STEM practice as well as the teaching of science, technology, engineering and mathematics as individual subjects.

A community for science education

Through collaboration with the [European Schoolnet Academy](#), Scientix offers training and continuous professional development for teachers via online courses. It has built a resilient network for collaboration and co-creation that involves an ambassadors' network of 1 237 participants across 51 countries, which continues to grow.

"Our ambassadors have truly become advocates for the Scientix values of collaboration, inclusion and innovation," highlights Gras-Velazquez.



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The [STEM School Label](#), another key Scientix initiative, enables schools to optimise their STEM education strategies and share best practices with other schools in Europe. All activities and initiatives in the field of STEM education are showcased annually in the online STEM Discovery Campaign.

Furthermore, Scientix is in the process of merging with [STEM Alliance](#), a growing network of industry partners that will foster the connection between STEM education and industry. This collaboration between educators, policymakers and industry partners is expected to shape the future of STEM Education.

"Just like in science, connections and networking opportunities nurture innovation in the field of STEM education, vital for open schooling," emphasises Gras-Velazquez.

Promoting STEM careers

Scientix also introduces students of all ages to STEM career prospects through career profiles available in its repository. These profiles are enriched with detailed career sheets, immersive videos or dynamic podcasts.

To further promote STEM career paths among students, Scientix aims to introduce STEM career advisers in participating schools. Moreover, a new optimised platform is in development, offering accessible resources, events and opportunities.



Just like in science, connections and networking opportunities nurture innovation in the field of STEM education, vital for open schooling.

PROJECT
Scientix 4 - Scientix 4

COORDINATED BY
EUN PARTNERSHIP AISBL in Belgium

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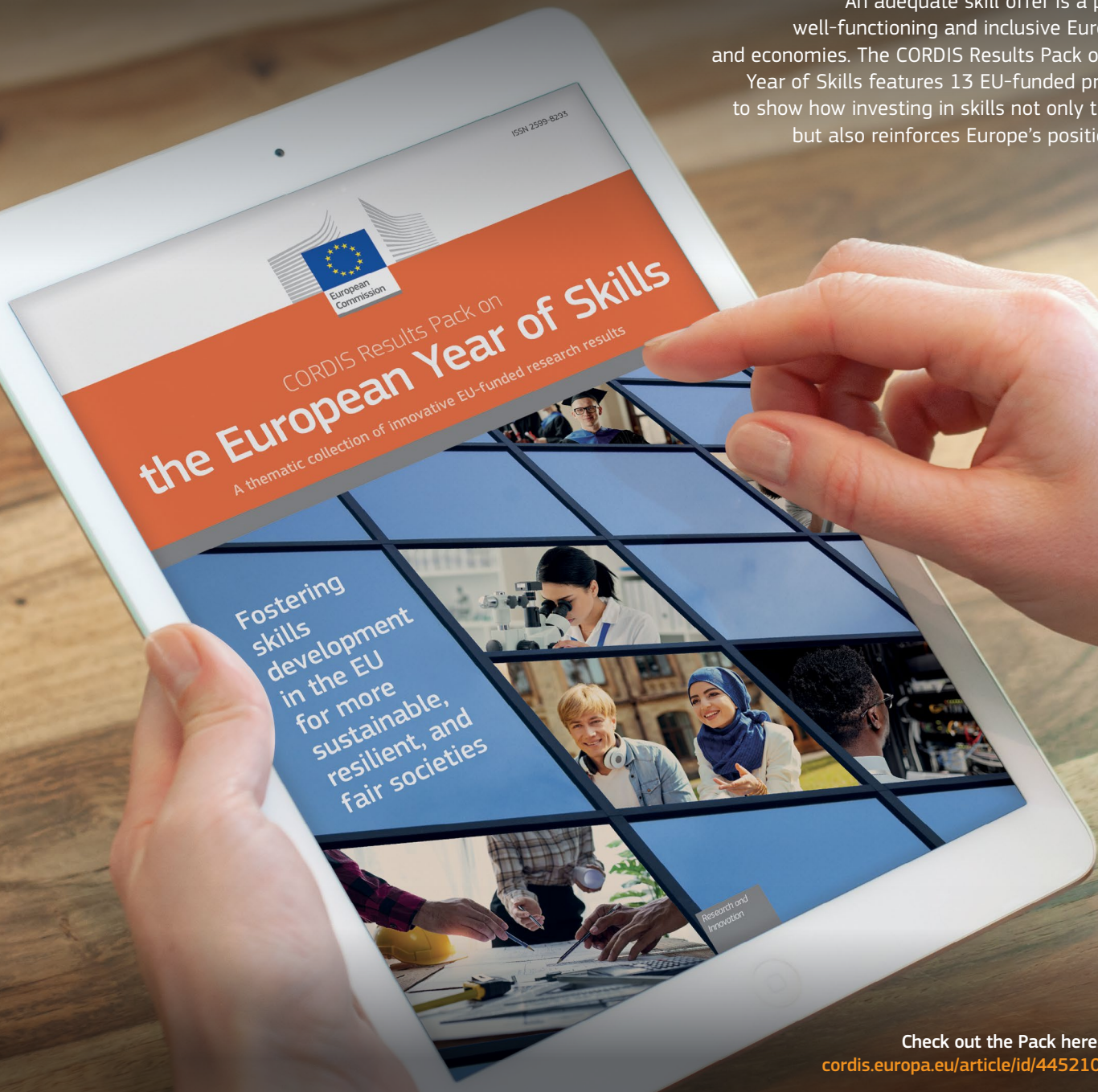
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