REthinking
EDUcation COmpetencies.
Expertise, best practices
and teaching in Digital Era

Final Report

RE-EDUCO Project

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Organisation: Link Campus University (IT), Cyprus Computer Society (CSS), Hellenic Open University (GR), Insomnia Consulting (SP), Italian Digital Revolution Association (IT), Omnia Espoon Seudun (FI).

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RE-EDUCO REthinking EDUcation COmpetencies. Expertise, best practices and teaching in Digital Era

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Over the course of three years, the RE-EDUCO project gathered more than 30 high schools and vocational institutions under the *Rethinking EDUcation Competencies* Project aimed at building virtuous relationships between school-university-world of work-companies for digital innovation.

The main results of this great work are summarised in this report. We would like to thank all the schools, teachers and students for their trust, openness, and commitment to the project.

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Stefania Capogna

Project's Scientific Director

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Executive Summary

As highlighted in the recent work of the European Commission (2016, 2020/a; 2020/b; 2020/c), digital transformation gives a rapid acceleration thanks to the development of new technologies, including artificial intelligence, robotics, cloud computing, blockchain, industry 4.0 and the new Internet era. These innovations have a deep impact on lifestyles, socio-economic systems and learning processes. Digitalization and new technologies play a central role in this process, influencing the way people live, interact, study and work. Some professions disappear, others are replaced, and new ones are created; many professions and activities are transformed, and new ones will emerge.

Although several opportunities are emerging thanks to digital transformation, the greatest risk is given by a poorly prepared society to face the future: 90% of the jobs in the future require skills in the digital field (EE. CC, 2016); 44% of Europeans do not even manage the basic skills (Carretero, Vuorikari, Punie, 2017).

The education system is expected to lead this process, accompanying people throughout the entire period of their life, to take the opportunities and meet the challenges of a globalized, interconnected and rapidly evolving world [CEDEFOP, 2019].
This scenario impacts learning systems and models (Capogna et. al, 2020; 2021; 2023), as they must provide young people and citizens to live fully in new societies characterized by innovation, equity, and resilience, according to objectives for integrated sustainable development. Lifelong Learning (LLL) requires strong partnerships and synergies between business, education, research, working and learning environments. The education maintaining its high-quality profile must be accompanied by extracurricular activities and characterized by a broad approach, moving in an increasingly mobile and digital society, and exploring new ways of knowing.
Digital technologies play an important role in the development of more flexible learning environments, supporting the development of new skills: problem-solving, critical thinking, cooperation, creativity, computational thinking, self-employment.
Strengthening digital skills, using new technologies and constructing new methods for learning, represents a new challenge for educational systems.
The project contributes to promote future and transferable skills, supporting educators and support staff, to think and integrate innovative teaching/learning practices in the digital era, reinforcing the development of key competences. Considering the crucial role of the entire educational system, understood as macro-system.

instruction-education-training-university-orientation & transition-labour market, the project aimed at providing:
- an overall framework on digital innovation;
- methodologies and best practices on active learning processes;
- new methodological approaches;
- quality relationships among teachers, students, mentors and labour market;
- strengthening the profiles of the teaching profession.

Based on these premises the consortium worked during the whole project with the intent of providing schools and Higher Education institutions with a general framework to better understand the potentialities offered by digital transformation in strengthening teaching/learning processes, fostering employment and professional growth, including promoting new active citizenship in young people, to give them:

- the opportunity to increase their critical knowledge about the potentialities of new technologies and enhance their digital skills;
- a methodology for creative and active learning processes in the field of digital innovation;
- a set of helpful information, orientation and training activities about new learning paths, pedagogical approaches, and specific training modules to empower digital skills for teachers and students,
- the creation of laboratories for innovation in the field of digital culture;
- the creation of an international community for sharing best practices;
- the dissemination of digital culture and integration of new educational approaches within the different learning paths.

To reach these goals the project elaborated five closely related Intellectual Outputs (IO), and a Short-Term joint staff training, briefly summarised in this final report:

IO1 - NEED ANALYSIS: Active citizenship for digital society.
IO2 - Excellence in teaching, learning and skills development.
IO3 - School Contest: from the idea research to digital start up.
IO4 - Active Learning for digital innovation.
IO5 - Release Project results and Recommendations.

Key Words

ICT; digital technologies, digital competences, school development, enterprise, industry and SMEs, digital revolution, entrepreneurship, digital skills, youth workers, educational leaders

Introduction

This report is part of the first intellectual output of the RE-EDUCO project "*Rethinking EDUcation COmpetencies. Expertise, best practices, and teaching in Digital Era*", an Erasmus+ - KA2 Strategic Partnerships in the field of Education - project n. 2020-1-IT02-KA201-079433.
RE-EDUCO is an action research project aimed at creating the best conditions for the exchange of best practices to produce innovation and cooperation *in* and *between* partners' countries. Moreover, RE-EDUCO encourages the production, the experimentation and the exchange of new approaches and training methods in the field of digital culture. It enhances the role of digital culture by improving the possibilities for growth and exchange, widening the choices for young people in private and professional life.
Considering this complex framework, the project was born from the need to produce and test, at a transnational level, a range of methodologies and best practices to improve the skills of students and teachers and encourage them to embrace digital innovation in their lives, career opportunities and educational environments.

The main objective of RE-EDUCO was the development of the wide socio-economic environment by:
a. the creation of a bridge between different systems such as: education-training-work and research-innovation-development, necessary to contribute towards restoring education as the *common good*;
b. the innovation in organizational and educational processes to reduce the mismatch in job offer-demand in a digital era;
c. the promotion of excellence in teaching and skills development;
d. the spread of best practices at the European level;
e. the dissemination of a broader digital culture useful for managing responsibly digital technologies.

All the activities were carried out online due to the pandemic caused by Sars/Covid-19. This made it possible to direct all the project activities throughout the country by all the partners involved.

The RE-EDUCO aimed at improving teaching processes related to digital skills by:

-
- understanding digital transformation and emerging skills recorded by the world of work, to offer helpful information sources for students, teachers, families, policy and decision makers;

- ➢ improving teachers' strategic skills in the use of new methodologies and online environment in education and didactical activities;
- ➢ experimenting a new training model for students and teachers;
- ➢ aimed at contributing towards the creation of digital competences to respond to the new demands of knowledge and information by society on education, raising the quality of teaching as required by all European documents.

RE-EDUCO had as its objective the production of 5 Intellectual Outputs

IO1 - *Needs Analysis Active citizenship for digital society*.
This activity included two actions.

IO1.A1 *Needs analysis: Competence profiles update: perspective and impacts for the future digital society*

IO1.A2 *Empowering people and community. Risks and opportunities of digitalization for life*

IO2 - *Excellence in teaching, learning and skills development*
IO3 - *School Contest: from the idea research to digital start up*
IO4 - *Active Learning for digital innovation*
IO5 - *Release Project results and Recommendations*
C1 - *Short-Term joint staff training events*

Running from September 2020 to June 2023, the project consortium consists of DITES research centre, Link Campus University (Applicant), coordinated in partnership with the Cyprus Computer Society (Cyprus), the Espoon SeudunKoulutuskuntayhtyma Omnia (Finland), the Hellenic Open University (Greece), the Italian Digital Revolution (Italy) and Insomnia Consulting (Spain), as expected by the partnership and it was carried out as a timesheet.

However, the success of the project is due to the numerous associated partners who believed in the proposed activities and actively collaborated for the realization of all the initiatives[1].

[1] The list of Associated Partners is available at the following link: http://re-educo.eu/associated-partners/

Intellectual Outputs

IO1.1. Needs Analysis: Active citizenship for digital society

Needs analysis: Competence profiles update: perspective and impacts for the future digital society offers the general framework to better understand the potentialities offered by digital transformation in strengthening learning processes, fostering employment and professional growth, and promoting new active citizenship. A useful contribution for understanding how digital technologies can change organizational and production models was conducted by the World Economic Forum (Schwab, 2019), which outlined three possible developmental alternatives.

a) Automation as a channel of optimization

In this perspective, automation and artificial intelligence should benefit companies, their customers, and their workforce. Khanna (2019) imagines this scenario based on the adherence to four standards applied to the transformation process:

- improvement of job conditions and opportunities instead of workforce replacement;
- improvement in the way companies act in the market;
- addition of customer value;
- improvement of data-use potential without violating privacy.

b) Cooperation with machines, not automation

This perspective foresees the integration of the workforce with technology instead of recourse to replacement; something which may be pursued by involving workers in the adaptation of automation processes while avoiding alienation from them. The achievement of this goal would affect society at different levels (Heeks, 2020).

- It would have an impact upon policies that go beyond the logic of mere redistribution and welfare.
- The organizational aim would be to highlight the responsibility of the leadership and managerial systems.
- The industrial agreements would need to aim at promoting a different model of protection, by creating the essential conditions for the affirmation of a new social contract and development models where the use of digital technology would create renewed opportunities.

c) Digital transformation and transformation of the workforce

This would be achieved by creating digital work designed to promote employment standards suited to the digital economy and avoid the explosion of social inequalities capable of destroying the already fragile social fabric.

The contributions made by the McKinsey Global Institute (Manyika, Chui, Miremadi, Bughin, George, Willmott, Dewhurst, 2017) move along the same lines, and sustain that about half of the world's current jobs will disappear quite soon, partially offset by the birth of new jobs that do not exist yet and cannot even be imagined. The management of similar disruptive scenarios cannot be left either to chance or to self-regulating market mechanisms which, over a period of thirty years of uncontested development, have eloquently revealed their weaknesses in terms of: the depletion of collective resources; the failure in redistributing the enormous wealth produced; financial speculations, the widening of poverty brackets and the harshening of nationalistic, cultural, and religious clashes at global scale etc.

As Toynbee (2004: 78) recalls, "the effects of the industrial revolution show that free competition can produce wealth without producing *well-being*". Despite all this, virtuous experiences can be found here and there in the world. These experiences strive to create critical mass and establish themselves as an alternative. The difference lies mainly in the ability of political and managerial leadership to foresee solutions to problems, but also in their ability to view the reality with awareness and intellectual honesty, without either alarmism or facile enthusiasm. Recently, the European Commission launched a new *Pact for Skil*ls (European Commission, 2020/b), which considered the digital skills gap one of the most important issues for the future of Europe. The analysis through this needs analysis, aimed to offer a contribution towards defining a *European digital skills strategy* and global trend in this disruptive innovation by a better understanding of competence profiles trends, perspective, and impacts for the future digital society.
The IO1.A1 The *Needs analysis* is composed by three closely related sub-products:

- IO1.A1.1 *The European perspective and Annexes. Template for National on desk research*
- IO1.A1.2 *Needs analysis for national desk research elaborated by each country's partners*
- IO1.A1.3 The *Comparative Report*

IO1.A1.1 The European perspective and Annexes. Template for National on desk research

The European perspective[2] consists of two chapters.

➡Chapter one. *The theoretical framework for Digital Pattern innovatio*n illustrates the European vision related to the digital challenge for the future of the labour market; the digital transformation, explained by the development of new digital culture, pointing out new opportunities for competitiveness, labour market (emerging profiles and digital skills) education, cultural sectors, and society.

➡Chapter two offers an international comparison of labour market trends and schools based on documents, databases, and data sets of a secondary nature to summarise: the *skilling* and *reskilling* between innovation and transformation; the digital skills for High Schools.

Focusing on the mismatch and disruptive innovation determined by digital innovation, new profiles, new skills, new trends of labour markets, pulled by the industry 4.0 and the scenario of a *5.0 society* (that means high population aging rate; the creation of increasingly interconnected and at the same time fragile cities). Based on secondary data, the *European perspective and Annexes. Template for National on desk research* *Report* illustrates an updated analysis of the training needs expressed by the partner countries, focusing on:

- European policies and perspectives for digital culture;
- new technologies and digital skills;
- local labour markets trends and industry 4.0;
- new digital profiles;
- new skills for the digital society;
- skills gaps in the digital field.

[2] For downloading the *European perspective and Annexes. Template for National on desk research* http://re-educo.eu/wp-content/uploads/2021/08/IO1.A1_The-European-perspective_def.pdf

IO1.A1.2 Needs analysis for national desk research elaborated by each country's partners[3]

Based on a common theoretical framework and index, each country's partner (Cypro, Finland, Greece, Italy, Spain) elaborated the national research on the bases of local data set for secondary data extraction, related to local labour markets trends. Each national report illustrates:

- the national framework for the adoption and the development of ICTs in the labour market (specific laws, decrees, acts, contributions);
- financing programs of specific projects to implement digital technologies in a local context also considering the global pandemic;
- national framework to support the incorporation of digital technologies in education, with specific attention to high school;
- the type and selection of sources adopted for national needs analysis on the digital revolution and its effects on the labour market;
- how the professional units are defined at national level; c) what kind of sources are used for national needs analysis (institutional sources, open data, structured sources, chambers of commerce, employment services, direct research, other sources, etc.);
- the main results emerging from the on-desk research (national market labour trends with specific reference to the digital revolution and industry 4.0, professional development and emerging profiles, emerging competencies and digital competencies wanted, mismatch between job supply and demand, problems for educational institutions, useful consideration for local analysis).

[3] For downloading National Report:

- Cyprus National Report
- Finland National Report
- Greek National Report
- Spain National Report
- Italy National Report

IO1.A1.3 The Comparative Report[4]

The Comparative Report aims to summarise the strengths, weaknesses, risks, threats, and opportunities of the digital revolution in local labour market and high schools, focusing on:

- The development of ICTs in the labour market
- Financing Programs
- Digital technologies in Education
- Trends of the Labour Market
- Professional development and emerging profiles
- Emerging Competencies
- The main challenges for the educational system
- Swot Analysis

This work offers a general framework to better understand the potentialities offered by digital transformation in strengthening learning processes, fostering employment and professional growth, and promoting new active citizenship.

IO1.2. Empowering people and community. Risks and opportunities of digitalization for life

Based on the needs analysis results, each country's partners developed informative, orientation and training paths for high schools and vocational agencies. These seminars were addressed towards students and teachers to help them to better understand the new challenges posed by a hyper-technological society, strengthening their basic digital skills, and introducing them to higher level vocational skills, according to the career profiles of the European framework.

Each country partner ran many different courses organised as follows[5]:

➢ *Information seminars* carried out in seminar mode. Topics faced during these informative seminars were:

[4] For downloading *The Comparative Report*: *http://re-educo.eu/wp-content/uploads/2021/12/RE-EDUCO-Comparative-Report-Final.pdf*

[5] The program of the events is available at this link: http://re-educo.eu/events-io1-a2-empowering-people-and-community/

- European Context for digital innovation
- New technologies: risk and opportunities for work and life
- Cyberbullying
- Digital Ethics
- Critical use of social media and internet data

➢ *Orientation activities* aimed at illustrating to students and teachers the changes in the world of work and the way in which digital innovation changes the world of professions and the skills required. The purpose of these meetings was to lead students and teachers towards more informed choices and the activation of more effective personal learning and growth strategies, focusing on:

- New skills and new labour perspectives: Trends, profiles, emerging competences;
- Digital Technologies & Society 5.0.

➢ *Training courses,* realised in a mixed approach, and replicated in each country partner on two main topics:

- Digital Identity and Active citizenship.
- Secure data and privacy.

Table 1 - Empowering people and community schools, teachers, students involved.

	Information seminars (12 hours)			Orientation seminars (16 hours)			Training activities (24 hours)		
	Schools involved	Students involved	Teachers Involved	Schools involved	Students involved	Teachers involved	Schools involved	Students involved	Teachers Involved
Cyprus	4	201	11	4	201	11	4	167	10
Finland	2	91	7	3	73	7	2	73	6
Greece	3	127	9	3	127	9	3	127	9
Italy	9	518	70	9	106	70	9	96	70
Spain	1	80	4	1	57	3	1	15	2
TOT.	**19**	**1017**	**101**	**29**	**564**	**100**	**19**	**478**	**97**

Source: RE-EDUCO Project, IO1.A2

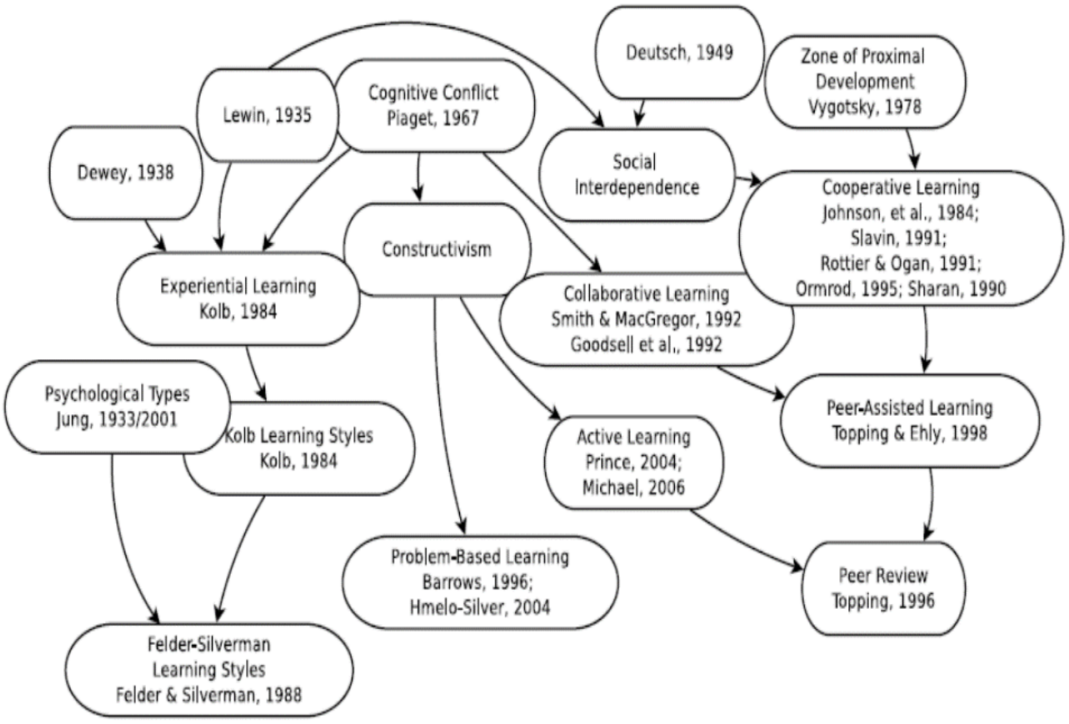
IO2 - Excellence in teaching, learning and skills development

The aim of this IO was to develop a training course and online learning community for promoting the creation of a community of teachers based on the model of Teaching Learning Canters, as requested by all European documents focused on the quality of learning issues.
In a student-centred approach to learning, classrooms move from direct instruction to a more community-driven environment, one that supports student empowerment, conversations, critical thinking skills, independence, and problem-solving techniques. Student-cantered learning strategies require and involve students in the overall planning process, implementation, and assessment of the lessons and the educational process. According to a student-centred approach,

the teacher has a supportive and advisory role. The teacher acts as a “facilitator” and the focus of teaching shifts from the teacher to the student putting learners’ interests first. Through the digital transformation and rise of educational technology, teachers have begun to make changes to instruction and assessments, as well as the physical classroom, at a faster rate than expected using innovative tools. These tools can effectively support student-centred approaches and techniques during both face-to-face and online lessons.

The student-centred approach encourages students to be active in and to take control of their own learning. The student-centred approach (see figure 1) includes student-student collaboration, student reflection on their learning processes and explicit instruction in the learning and thinking skills students need to effectively manage their learning in the present and future. Students are not on their own to decide what and how to learn. Through meaningful student-student interaction, students learn more in community with peers and others than they would during directed instruction. The role of the teacher continues to be to guide and structure the learning experience. Within a structure set by the teacher, students have choices and opportunities to reflect on the consequences of their choices.

Figure 1: History of Student-centred approach Chart example



Source: Kadry, S., Safieddine, F. (2016). Cooperative Active Learning Methodology in Mathematics. Proceedings of EDULEARN16 Conference 4th-6th July 2016, Barcelona, Spain pp. 4039-4045

Basic concepts and principles on which the student-centred approach is built are:

- ➢ The reliance on active learning
- ➢ An emphasis on deep learning and understanding
- ➢ Increased responsibility and accountability on the part of the student
- ➢ An increased sense of autonomy in the learner
- ➢ An interdependence between teacher and learner
- ➢ Mutual respect within the learner-teacher relationship
- ➢ A reflexive approach to the teaching and learning process on the part of both the teacher and

the learner.

Student-centred learning is Personalized, Competency-Based, Learning Happens Anytime - Anywhere, Students Take Ownership Over Their Learning, and students incorporate their interests and skills into the learning process. Research shows that low-income students who have positive relationships with their teachers have higher academic achievement and more positive social-emotional adjustment.

To this end, the Hellenic Open University planned and implemented an online learning training for teachers focusing on *Methodologies for learning for innovative online pedagogical approaches for non - formal learning (community) and online training.*

The RE-EDUCO learning platform (https://elearning.daissy.eu/course/index.php?categoryid=1) was designed and developed in the framework of the RE-EDUCO project to mediate the learning process, focused on the following topics:

- Student-Centred Learning Techniques
- Peer Assisted Learning Strategies
- Technology-Enhanced Assessment
- Technology Enhanced Learning Tools
- Module Design – Carpe Diem Workshops
- Managing RPL Assessments and Portfolios

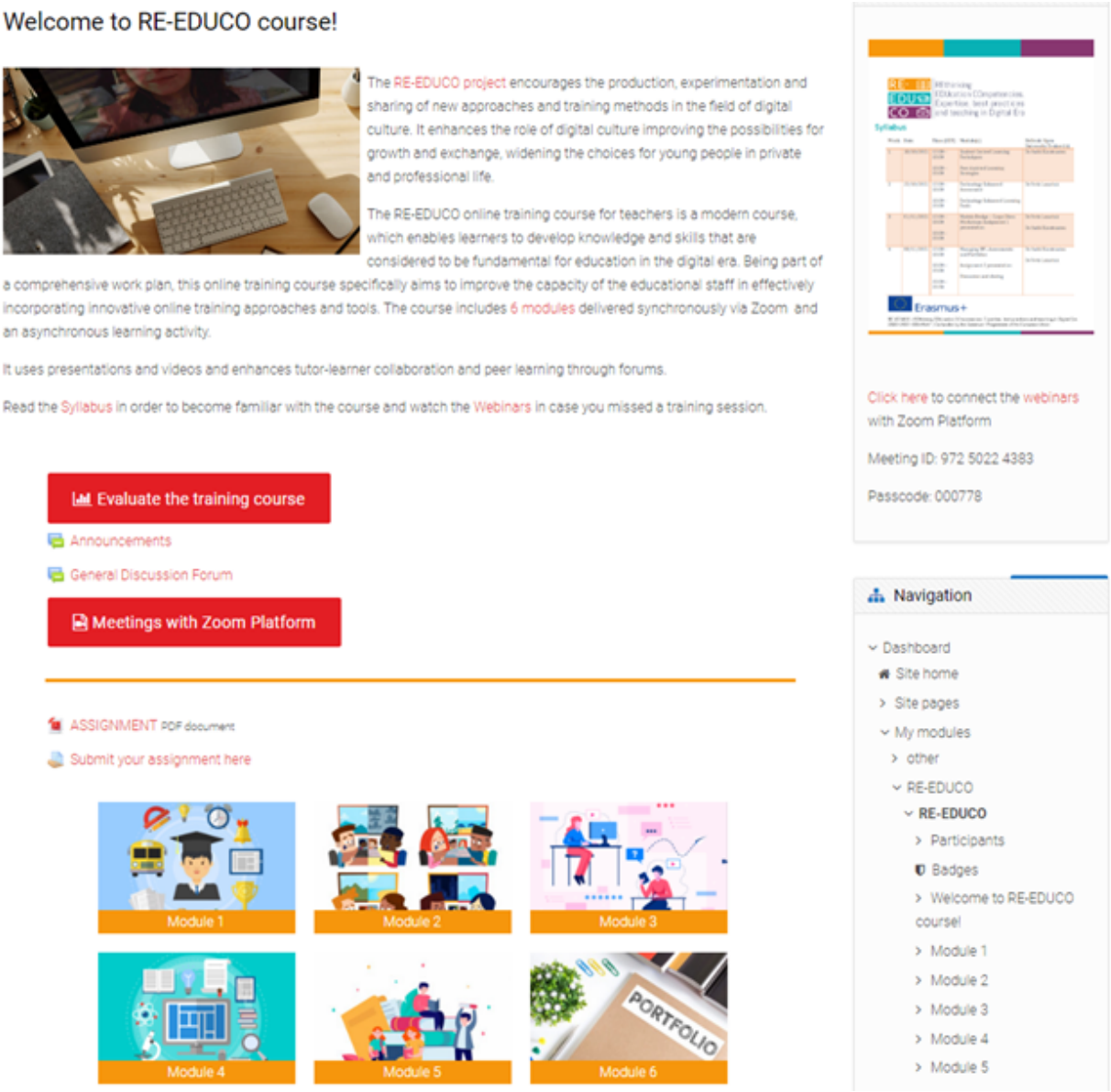
Table 2. Syllabus of the RE-EDUCO training course for teachers

Week	Date	Time (CET)	Module(s)	Hellenic Open University Trainer(s)
1	18/10/2021	17:00 – 18:00 18:00 – 19:00	Student Centred Learning Techniques Peer Assisted Learning Strategies	Dr Anthi Karatrantou
2	25/10/2021	17:00 – 18:00 18:00 – 19:00	Technology Enhanced Assessment Technology Enhanced Learning Tools	Dr Fotis Lazarinis
3	01/11/2021	17:00 – 18:00 18:00 – 19:00	Module Design – Carpe Diem Workshops Managing RPL Assessments and Portfolios Description of the Assignment	Dr Anthi Karatrantou Dr Fotis Lazarinis
4	08/11/2021	17:00 – 19:00 19:00 – 19:30	Assignments presentation Discussion and closing	Dr Anthi Karatrantou Dr Fotis Lazarinis

RE-EDUCO Project, IO2

We have also developed an assignment which should be implemented in groups and was mandatory for receiving the certificate for successfully completing the RE-EDUCO training course for teachers. The required study time for the assignments is estimated to be 4 hours.

The training course was realized via a fully online learning model in English without having an enrolments cap. There were no prerequisites and was free of charge. Digital learning material was developed for the training modules, which was made available through the RE-EDUCO e-learning platform. The figure below depicts the home page of the RE-EDUCO training course. Participants were able to navigate to the training modules, to read their descriptions and learning objectives and study the learning material.



RE-EDUCO training course for teachers' home page

The online teacher training program (http://re-educo.eu/training-course/) counted the participation of **653** people from all partner countries, **214** of them completed the training course successfully. The total required study time to complete the online course for teachers was estimated at 40 hours.

Table 3. RE-EDUCO training course registrations

Country	Registrations	Total
Greece	539	**653 registrations**
Italy	40	
Cyprus	45	
Spain	23	
Finland	6	

RE-EDUCO Project, IO2

Table 4. RE-EDUCO training course successful completions

Country	No of people	No of teams	Total
Greece	188	64	**214 people**
Italy	14	5	
Cyprus	9	3	
Spain	3	1	
Finland	-	-	

RE-EDUCO Project, IO2

In conclusion, to evaluate the course and its basic dimensions such as, e-learning platform, learning content course structuring, and learning experience of the participants, as well as achievement learning outcomes, two approaches were used:

a. Assignments for evaluation of the learners.

b. An anonymous online questionnaire for evaluation of the course and the platform.

What can be concluded from the online course for teachers are:

- Very high number of enrolments.
- Results of the course evaluation were quite positive and encouraging.
- Very important to consider that learners had adequate ICT skills prior to the course.
- Covered contemporary topics relevant to the working duties of the teachers'.
- Course was well organized, and the assessment activities helped them gain a better understanding of the topics.
- Several of the participants expressed their interest in presenting their assignments to the class. This should be enabled in every teacher training activity as it helps students to evolve professionally.

The RE-EDUCO training course included various contemporary topics with regards to digital technologies in education attracting a very high number of registrations. In fact, course enrolments reached **653** which exceeded the project's goal (n=100) by far. The large number of participants led us to change our initial training plan, in which we had foreseen two group assignments. To provide adequate feedback to all learners and be able to present selected assignments, we reduced the assignments to one. Thus, we managed to devote sufficient time to highlight good practices and give the floor to learners to share their thoughts and experiences during the final online session. The results of the course evaluation were quite positive and encouraging. The course covered contemporary topics relevant to the teaching duties of the teachers. This is very important because, as it was stated by the participants, they already had adequate ICT skills prior to the course. Teachers believed that the course was well organized, and the assessment activities helped them gain a better understanding of the learning materials. In the final free text comments, some asked for more interactive activities and more interaction with the other trainees. This was partly facilitated through the collaborative final project assignments, but with a more manageable number of participants, more collaborative activities could be completed during the training sessions. It is worth noting that most of the lesson plans included in the assignments were interdisciplinary and teachers utilized educational methods, approaches and techniques included in the course modules. The quality of the lesson plans and the discussions between the participants showed the interest of the participants for the course content and their willing to learn new methods, techniques, and tools. During the last session, several of the participants expressed their interest to present their assignments to the class. This is very important and should be enabled in every teacher training activity, as it helps students to evolve professionally, to discuss their work with other teachers and, in general, to become skilful in their work. In our course, a small number of presentations was finally possible, due to time restrictions. But teachers were asked, should they wish to share their works in the course forum. That way, a pool of ready-to-use lesson plans would be developed, and an informal community of practice would be initiated. Through feedback and discussions with colleagues, these teaching resources can be improved, and the communication

and technical skills of the teachers will be further developed.

Edu Hub Community of Practice

EDU HUB is the natural continuation of the training course carried out by Hellenic Open University.

EDU Hub is an open community of practices which, by enhancing the opportunities for networking, wants to give all those who work in the world of education, training, orientation, and social innovation the opportunity to:

1. build alliances and new synergies to generate value;
2. share good practices, experiments and experiences made for sharing them, and promote the dissemination, sharing and social innovation;
3. participate in training activities and/or experiments carried out through projects promoted by the DITES research centre;
4. become active agents of social innovation;
5. participate free of charge and actively in the *peer lab* and *contamination lab* courses designed to promote quality in education and teaching.

Joining the EDU HUB community is free, and it allows you to: receive the free quarterly newsletter of the DITES Research Centre with the extract from the journal *Quaderni di Comunità. People, Education and Welfare in the 5.0 Society,* to be informed about training initiatives and conferences to participate in for free and informed about the calls and contests addressed to EDU HUB Community[6].

IO3: School Contest: from the idea research to digital start up

The RE-EDUCO international school contest[7] aimed to create new innovative ideas and the development of entrepreneurial and digital skills among students, promoting new cooperation, networking, including network creation and strategies, peer learning from idea research to digital start-ups sessions. An experience able to create positive cross-fertilization among school-university and work, as well as to produce innovative project ideas to accompany the development of an entrepreneurial idea and start-up. The School Contest was been conceived as

[6] To join the EDU HUB Community, register by filling out the form at this link: https://forms.gle/y5DnHufs2PKzgJvp6

[7] For downloading Contest Rules: http://re-educo.eu/re-educo-school-contest-rules/

a laboratorial activity directed at students and teachers. The contest was been structured into two differentiated parts: a set of mentorship sessions to develop the innovative ideas and a

session with start-ups to give valuable feedback to the students' teams about their ideas. The main goal of the Contests was to involve all the players in sharing new creative ideas for a digital development in various sectors key to the European economy, using innovative learning methodologies and new technologies. The competition addressed the following thematic areas: Climate Change, Education, Health & Wellbeing and Smartcities.

Each partner country organized a first phase of the contest nationally, directed at students and teachers, creating links and mentorship by experts and schools. Each partner provided a team of experts for coordinating Contests activities in their own countries. High school students worked in relation with universities, companies, designers, and innovators for the development of creative and innovative ideas. Students, therefore, had the opportunity to meet the labour world in a creative context. These creative experiences designed co-sharing paths for digital development in an innovative, sustainable, and inclusive way in various sectors key to the European economy.

The Contest contributed to enhance students' participation and improve their digital, entrepreneurial, and soft skills. At the same time, they had the opportunity to improve their employability level. On Monday, October 3, 2022, the winning students from each country (Finland, Greece, Italy, Spain, and Cyprus) of the international competition of the RE-EDUCO project presented their proposals to an international jury of experts, who provided feedback and evaluated the proposals. The proposals submitted covered different problems involving the sectors of e-health and wellness, climate change, smart cities, and digital education, and offered solutions that integrate digital technologies to contribute to a more sustainable, inclusive, and just planet. The sectors covered by the proposals were as follows:

– CLIMATE CHANGE: How to ensure sustainable consumption and production, and combat climate change and its impacts.
– EDUCATION: How to ensure inclusive and equitable quality education and promote learning opportunities.
– HEALTH AND WELL-BEING: How to ensure healthy lives and promote well-being for all at all ages.
– SMARTCITIES: How to make cities and communities sustainable.

The International Competition of the RE-EDUCO project had the following objectives:

- To design shared pathways for digital development in an innovative, sustainable, and inclusive way in several key sectors for the European economy, using innovative learning methodologies and new technologies.
- To produce innovative project ideas to accompany the development of an entrepreneurial idea and a start-up, through collaborations with digital companies. Strengthen relationships between teachers, students and companies, in an entrepreneurial vision through active and creative educational approaches. Development and/or use of tools and Apps to promote digital innovation in specific fields. Enhance student participation and improve their digital, entrepreneurial and soft skills. Project management and teamwork.

The day concluded with one winner per country. The winning proposals from each country are as follows:

Table 5. Winner team for School Contest

Country	School participant	Field	Idea
Winners from Cyprus: *SimplIE-GREEN*	Pascal Private School Nicosia (team 3 students and 3 educators)	Climate Change	"SimplIE Green - Aiming towards a more sustainable future". The team identified the problem faced all around Europe where an average European generates over 450kg of waste per year. For this reason, the project introduces a Green" a smartphone app that serves as a guide to living a green and zero-emissions lifestyle. To persuade citizens to change their minds and care more about the environment and their surroundings. The app will encourage people to recycle more and landfill less, as well as use electric vehicles. For this reason, the app will: ● Primarily be an electronic map that displays the various locations of recycling bins and electric vehicle charging stations across a European country. ● Keep users up to date and remind them when to take out their recycling bags for pickup by the trucks. ● Be capable of connecting with your electric car's navigation system to suggest the nearest charging station. ● Introduce an awards scheme, in which each time a user recycles into an electronic bin, they will be rewarded. ● Include a list of recyclable goods and those that should not be recycled.

Winners from Finland: *Bono's Fresh Kicks*		Climate Change	We offer ecological hand wash for sneakers. A new look for the shoes and more kilometres with Bono's high-quality hand wash, using high-quality textile and leather conditioners. Bono's is a shoe laundry that provides high-quality cleaning and maintenance for sneakers 100% handmade.
Winners from Greece: TranschApp	4th High School of Agrinio (team: 6 students and 1 teacher)	Smart Cities	The suggested application would provide, at any time, the possibility of informing parents and school, of the arrival and departure of their children to and from the premises. Communication between users (students, parents, school, driver, and administrators) will be possible, and immediate, by using the TranSchApp. Furthermore, by using such an innovative application, students envisioned serving the need of updating the exact location of the bus, resulting in each student and parent knowing the arrival/departure time of the bus at the stop of his choice. As a result, parents will be reassured because they will receive information about the boarding/disembarking of their children by means of a message. Pointless routes will be avoided, because any students are absent, the driver will be informed and if possible, he/she will change the route, saving fuel and thus reducing the environmental footprint. In the case of a delay, the school will be informed, and the students' absence will immediately be justified.
Winners from Italy: *Scavengers of the Sea*	Liceo Buchner di Ischia (team: 5 students and 1 educator)	Climate Change	The main goal of the project is to tackle the problem of cleaning the seas. There are currently no sea surface cleaning services of floating waste like those that exist for street cleaning. The team believes that it is especially necessary for municipalities, and hotels interested in tourism to implement such a service. They highlight the example of the island of Ischia, which suffers from this problem, plus the fact that not all its drains are yet equipped with purifiers. According to a 2014 study, in Tyrrhenian Sea, for instance, there was a waste density of 26 waste per 〖km〗^2. •Now, sea cleaning consists of boat patrols. This is an inefficient method in extensive areas, being a waste of time and fuel, in addition to increasing pollution. •The most innovative part of our idea consists of the design of a robotic system for cleaning the seas. Through the aid of drones, which take off from the patrol boats, waste can be collected in areas that are difficult to access for humans. Small waste can be collected directly by drones while larger waste can be geolocated. The location of the waste is communicated to the boat, which can then reach it and collect it. •Thanks to the drones, we can also identify any illegal discharge or malfunction in wastewater release systems into the sea. •We also want to study the characteristics of the

			coast and continuously monitor its changes. This information will be sold to municipalities, hotels, fishermen etc. •Now there are no commercial companies on the market that offer this service. Some voluntary associations such as Hester (https://www.hester.it/) are trying to work in this direction. Therefore, our proposal would be a novel approach. •Thus, we would initially like to cooperate with Hester at the beginning of our project, then after the first year, we would like to start to increase our business with other companies. •Furthermore, the innovative methods that we described in the previous slide make it possible to facilitate human work and make it less dangerous. The use of drones improves the collection process and reduces the random way boats look for waste, saving energy. We believe that implementing such a service can bring a great return in terms of promoting the image of the area, thereby increasing tourism revenues.
Winners from Spain: *SororidApp*	Colegio Santa Joaquina de Vedruna, Sevilla	Smart Cities and the eHealth and Wellbeing sectors	The project is a digital application for Smartphones, a virtual platform that unifies content of interest related to different verticals that affect women's daily lives. As a virtual platform it has a double objective: ● To create a safe virtual space for women that, using geolocation, allows other known women to track and monitor the path followed by a fellow woman when returning home or walking alone. ● To disseminate, promote and give visibility to content created by women: music, art, technology, literature… Following the business model canvas methodology, the project defines the value proposition as follows: A unique virtual platform for women that gathers quality information and provides a safe communication space, with functionalities that guarantee the physical and mental integrity of its users. It will create a brand image, an IT infrastructure and a department that will constantly pursue content created by women to generate daily interaction with the users. It will need resources for the software development journalists and moderators who will ensure the quality of the content published and shared through the app. Furthermore, it finds key partners in the internet providers and web domain providers, and in future, collaborators in other platforms and feminism associations.

			The app has a free version with the geolocation functionality and limited access to the social network and other content, with a premium version that includes all the functionalities of the free version together with extra content.

IO4 Active Learning for digital innovation

A personalized active learning plan for students was been prepared so that the teams could actively engage and learn how to present and promote their start-ups. The learning activities[8] were articulated into various modules and video presentations to improve students' digital skills and competencies, involved in the school contest.

- Computer essentials
- Online essentials
- Word processing
- Spreadsheets
- Presentation skills workshop

Before starting the training, students have been involved in the MyDigiSkills self-assessment tool (MyDigiSkills) which provided students with a comprehensive understanding of their level of digital skills and supported them in gaining those skills needed in order to present their projects in an innovative way.
The design of the platform was been designed based on the *European Digital Competence Framework for Citizens*, also known as DigComp, and was intended to help individuals identify their proficiency level in five critical areas: *Information and Data Literacy*, *Communication and Collaboration*, *Digital Content Creation*, *Safety*, and *Problem Solving*.
The data collected from the platform provided the project team with valuable information needed to create the best possible training material.

A total of **139 students** from all partner countries completed the assessment, except for Finland. During the assessment process, Finnish schools were on vacation and students were not accessible.

[8] For downloading all learning activities: http://re-educo.eu/active-learning-for-digital-innovation/

We observed some similarities among the results from all partner countries (Cyprus, Greece, Italy, and Spain - no data was collected for Finland). Across all countries, *Area 1 Information and Data Literacy* and *Area 2 Communication and Collaboration* consistently scored highest, indicating that the responders generally possessed good digital competences related to communication, information management, and online behaviour. This is not surprising given that most of the responders were secondary education students or graduates between 16-24 years of age, and therefore, individuals who are typically familiar with digital tools. On the other hand, the lowest scoring area in each country was Area 3 *Digital Content Creation*, which encompasses skills related to programming, copyright, and licenses. This highlights a common challenge for digital competences development in Europe, as the ability to code and understand intellectual property rights is becoming increasingly important for many sectors. It is worth noting that the weak performance in these areas may reflect a lack of formal education or training opportunities, rather than a lack of interest or ability among the responders. Further research is needed to identify the underlying causes and potential solutions to address this gap.

Responses

We received responses from 5 out of 6 partners, and 4 out of the 5 different partner countries. In total, we received 139 responses (Cyprus: 25, Italy: 62, Greece: 47, Spain: 5, Finland: 0) which yielded the following results per country:

Cyprus

In Cyprus 25 individuals completed the self-assessment. Most of them were male secondary education students. The lowest scores, overall, were in areas 3, 4 and 5, and more specifically in: Copyright and licenses (71.41%), Programming (72.66%), Creatively using digital technologies (73.80%) and protecting personal data and privacy (74.40 %). The lowest score of all, however, was in area 2, in engaging in citizenship through digital technologies (69.01%) The highest scores, overall, were in areas 1 and 2, and more specifically Interacting through digital technologies (92.38%), Netiquette (88.07%), Sharing through digital technologies (85.79%), Managing data, information and digital content (86.38%), Evaluating data, information and digital content (84.12%) and Browsing, searching, filtering data, information and digital content (81.74%). “Interacting through digital technologies” had the highest score overall.

Spain

We collected 5 responses from Spain. The lowest scored Areas were Area 4 (57.8%), Area 3 (67.99%) and Area 5 (69.36%). More specifically, the lowest scoring skills were Protecting the

environment (55%), Protecting devices (56.75%), Protecting health and well-being (57.8%), Protecting personal data and privacy (61.65%) and Copyright and licenses (61.7%). On the other hand, the highest scored areas were Area 1 (78.97%) and 2 (79.86%). The skills that scored higher were: Interacting through digital technologies (91.75%), Collaborating through digital technologies (88.93%), Sharing through digital technologies (86.75%) and Managing data, information and digital content (88%)

Italy

In Italy, 62 individuals completed the self-assessment. Most of them were female secondary education students. The lowest scores, overall, were in areas 3, 4 and 5, and more specifically in programming (28.29%), Creatively using digital technologies (44.09%), Protecting devices (50.06%), Integrating and re-elaborating digital content (50.89%) and Copyright and licenses (50.60%). Also quite low was the score from area 2, in Engaging in citizenship through digital technologies (48.88%). Programming was the weakest point for the Italian participants Area 1 and 2 scored higher compared to the other ones. More specifically, Netiquette (73%), Interacting through digital technologies (69.43%), Evaluating data, information, and digital content (71.74%), Managing data, information, and digital content (60.26%) and sharing through digital technologies (61.91%)

Greece

The lowest scored areas for the Greek responders were Area 3 (61.99%) and Area 5 (66.78%). More specifically, programming scored relatively low at 51.9%, followed by Solving technical problems at 59.94%. Creatively using digital technologies (60.56%), Copyright and licenses (61.02%), and engaging in citizenship through digital technologies (62.6%) were also on the lower scale. Areas 1 (75.73%) and 2 (70.98%) were the highest scored ones, with Netiquette (83.75%), Interacting through digital technologies (80.05%), and browsing, searching, filtering data, information, and digital content (79.16%) getting the highest scores.

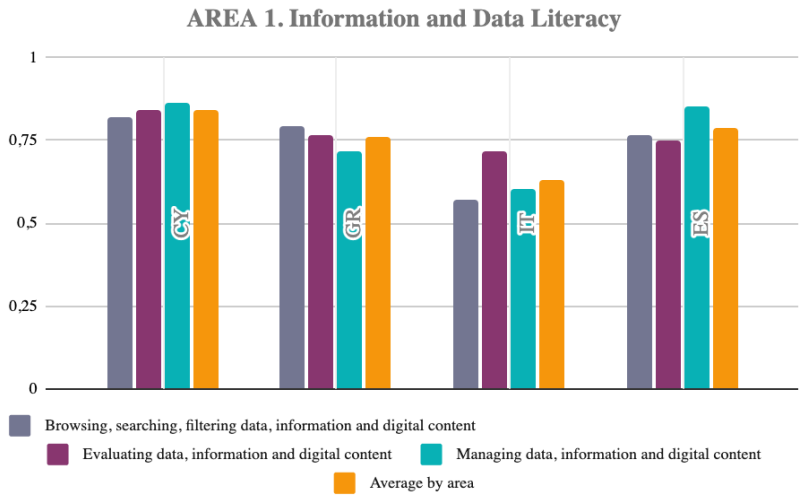
Finland

No data was collected from Finland.

We identified some similarities among the results. For every country, the strongest areas were Area 1 and Area 2. Skills such as: Interacting through digital technologies, Netiquette, sharing through digital technologies, managing data, information and digital content, Evaluating data, information and digital content and Browsing, searching, filtering data, information and digital

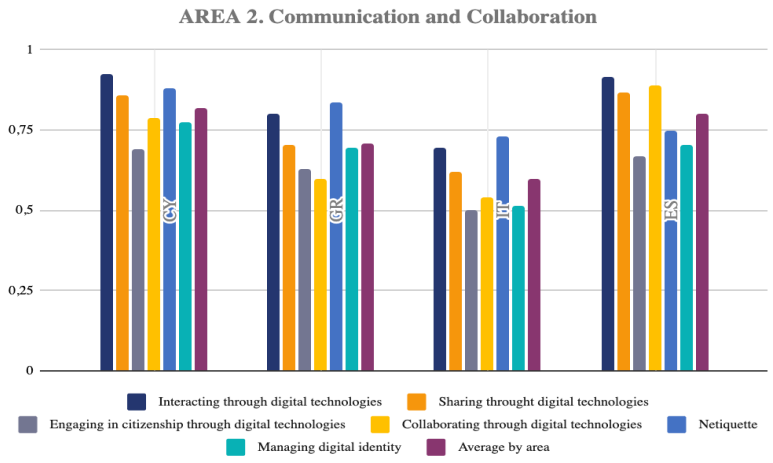
content, scored quite high in most of the cases. The results are not very surprising if we take into consideration the average age group of the responders who are usually very familiar with the use of technology in their daily communication and interactions. The area identified to be among the lowest in each country, is Area 3 and more specifically skills such as programming and Copyright and licenses.

Graph 1. Area 1 Information and Data Literacy



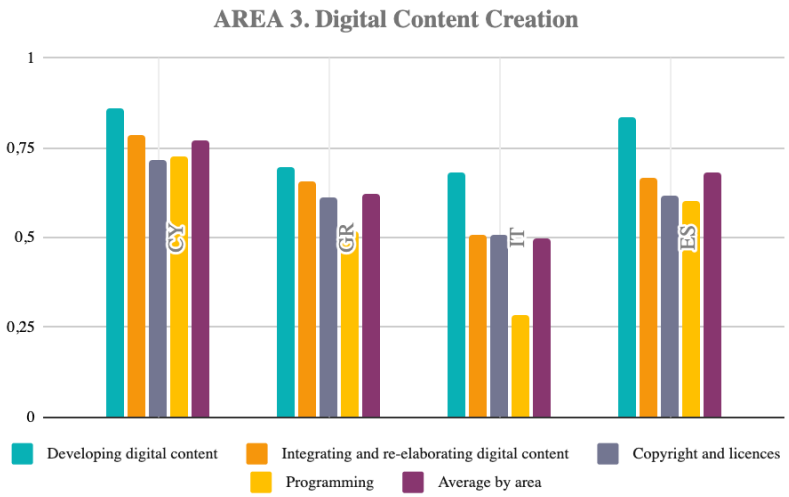
RE-EDUCO Project, IO4

Graph 2. Area 2 Communication and Collaboration



RE-EDUCO Project, IO4

Graph 3. Area 3 Digital Content Creation

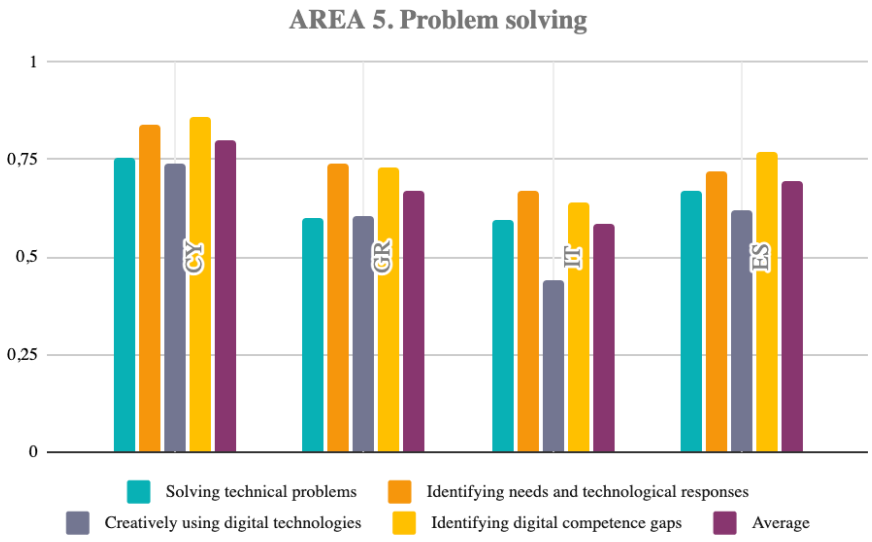


RE-EDUCO Project, IO4

Graph 4. Area 4 Safety

RE-EDUCO Project, IO4

Graph 5. Area 5 Problem Solving



RE-EDUCO Project, IO4

After analysing the results, the partnership designed educational modules to develop and present a business plan, considering the key skills needed. The modules were based on the Essential Skills modules covered by ICDL, the world's leading digital skills certification.
The *Active Learning for digital innovation* concerns the development of a personalized active learning plan for students through which they can:

a) identify what digital skills they are missing to achieve their set goals and
b) be prepared to be able to actively engage and learn how to present and promote their start-ups developed under IO3.

The modules included[9]:

- *Computer Essentials:* covering basic computer knowledge, such as hardware, file management, networks, and malware, as well as topics such as backing up data, updating software, and using anti-virus systems.
- *Online Essentials:* providing information on web browsing, communication tools (e.g. emails), and

[9] For downloading Teaching-Learning Modules:

- Computer essentials
- Online essentials
- Word processing
- Spreadsheet

- security and safety measures to protect personal data online, make safe online purchases, and control internet use.
- *Word Processing*: guiding the user on how to use the Microsoft Word application.
- *Spreadsheets*: guiding the user on how to use the Microsoft Excel application.

Those were supported by a number of video-tutorials (available through RE-EDUCO YouTube channel). The tutorials focused on communication and presentation skills and consisted of the following Science Communication Workshop video tutorials:

- "How to K.I.S.S. better in Science!" Presented by Constantinos Timinis from the University College London "No more Jargon", Presented by Marianna Pagkratidou from the Technological University Dublin
- "My Biased Brain and its Story with Science Communication", Presented by Phivos Phylactou from the Cyprus University of Technology
- "The Power of Presentation", Presented by Toumazis Toumazi from the Cyprus Computer Society
- "The Use of Body Language", Presented by Toumazis Toumazi from the Cyprus Computer Society

Table 6. *Active Learning for digital innovation*. Teachers and students involved

KPI		Number expected	Number achieved
CYPRUS	Students	30	32
	Teachers	5	12
GREECE	Students	30	101
	Teachers	5	13
ITALY	Students	30	49
	Teachers	5	5
SPAIN	Students	30	14
	Teachers	5	4
FINLAND	Students	30	104
	Teachers	5	2

RE-EDUCO Project, IO4

The educational modules developed during this IO and the video tutorials available through the project's YouTube channel were found to be useful and appropriate for the specific target group and objectives by all partners.

IO4 elaborates Learning/teaching/training material for Active Learning for digital innovation to improve their digital skills and competencies. The training will help them identify their personal gaps and will support them in gaining those skills needed to present their projects in an innovative way. IO4 released in open access the self-evaluation test and the free training modules to help students reach the identified standards set. Despite using various dissemination tools such as newsletters, e-mails, social media campaigns, and phone calls, the workload of teachers and students during school exams was a major obstacle. The COVID-19 pandemic also negatively impacted the involvement of the target groups, as person-to-person communication and visits to schools were restricted.
In conclusion, we can state that the combination of training with the use of suitable learning materials, the mixture of a variety of learning modalities, the opportunity given to students to develop their innovative ideas through a structured and well-monitored process supported by their teachers and the well-organized competition and pitching in front of a qualified panel of judges can be identified as the crucial success factors of this project; thus creating a model for future implementation in other setups and variable content.

C1 - Short-Term joint staff training events

The Staff training focus on *Strategies and tools for LLL in the society 5.0.* It was carried out online due to Covid-19 restrictions.

Day 1, 20.9.2021: Empowering people and community *at 11:00-15:00 CET*

Facilitators from Omnia: Ms. Veera Lahti-Olsen and Mr. Esko Lius

- Warming up: participants' presentations and expectations (Padlet), 30 min.
- Empowering of people and community Workshop, case of City of Espoo MakeWithEspoo platform (link), 1,5 h. Mr. Esko Lius
- LLL, non-formal learning, society 5.0, public engagement and digital transformation, 2 hrs Ms. Veera Lahti-Olsen

Day 2, 22.9.2021: Technology Enhanced Learning *at 11:00-15:00 CET*

Facilitators from Omnia: Ms. Mimmi Heiniö (Ms. Veera Lahti-Olsen), Mr. Esko Lius and Mr. Siim-Eigo Saar

- Quiz time: teams compete on the quizzes created the previous day (e.g. on Kahoot, Padlet)

- Technology Enhanced Learning, digital transformation/start-ups/teacher competences and their practices to partner with the private sector (presentations, participatory activities, discussion) – work sheet.

Day 3, 4.10.2021: Producing and sharing audio-visual content effectively *at 11:00-15:00 CET*

Facilitators from Omnia: Mr. Esko Lius and Mr. Siim-Eigo Saar

- Quiz time: teams compete on the quizzes created the previous day (e.g. on Kahoot)
- Training based on IO5, to be planned by P6 (Omnia), at A GRID/Omnia Makerspace (web, photo gallery)
- how to produce and share audio-visual content effectively: includes hands-on training
- how to take advantage of YouTube
- Wrap-up: creating project podcast/vlog content/collecting material on Padlet

IO5.1. Recommendations

Many political documents highlight the right of all citizens to high-quality and inclusive education, training, and Lifelong Learning (LLL) but recognition of non-formal and informal learning still plays a minor role in many countries. LLL influences and enhances employability and competitiveness as well self-sustainability, social inclusion, active citizenship, and personal development.

The RE-EDUCO project addresses the need to provide a new innovative approaches and training methods based both on formal and on non-formal and informal learning by implementing new online materials and courses as well a new innovative learning method (student competition)[10]. These materials enable and encourage monitoring the impact of European policies to:

- offer LLL opportunities for both men and women, with individualized and adaptive pedagogies, flexible learning modalities, pathways across types of education and training and across activity sectors, recognition, validation, and accreditation of non-formal and informal learning, career guidance and counselling;
- give possibilities to learn by different methods in different environments;

[10] Re-Educo student competition: RE-EDUCO - YouTube: https://www.youtube.com/channel/UCWNZR6NJyDiVdN3bMq0i-fQ/featured

- provide and support students in an individual flexible LLL path;
- train teachers in use and recognition of non-formal study methods;
- support teachers and instructors in recognition and validation of prior learning;
- support use of EU tools, micro-credentials, and Open Badges.

Achieving better modern and competitive education means student-based learning opportunities, more flexible and permeable VET systems as well the validation of non-formal and informal learning.

Digital skills are more and more needed in working life. And the trends change fast. The basic knowledge must be there so that the students can learn and use the skills in the working life (eg. robots and AI).

All teaching can be combined with a variety of digital applications. Some are inclusive (Canva, Video editors etc.) and some are activity-based (Padlet, different mobile apps etc.). The question is more about how to encourage teachers to seek out and experiment with the raw new and integrate it into teaching, even if their own knowledge of the subject is not perfect. Students learn when given the opportunity. However, digitalisation should not become an end, in which case it may even interfere with the assimilation of the content, but there are great tools to support the activity.

The project promotes the production, experimentation and sharing of new approaches/training methods in digital innovation. Through research, best practices exchange, training and creative activities, the role of digital culture will be enhanced as a means of improving the possibilities for growth for students and teachers, widening their choices in private and professional life, improving the access to the labour market, and renewing educational systems. The project supports individuals in acquiring and developing basic skills and key competences.

IO5.2. You Tube RE-EDUCO Channel

During the Project the consortium created a *Youtube RE-EDUCO channel* to ensure the continuity and sustainability of community and lifelong learning online training paths for teachers and students. All materials are written in English and remain available in open access. The main objective of the RE-EDUCO You Tube channel is to disseminate and build a space for sharing best practices among partners, experts, teachers, and students in an international perspective.

The better understanding and competence in the fields of digital culture, innovation, and entrepreneurship gained by the students and teachers who took part in the project extend the

usefulness beyond the project outputs and outcomes, as the nature of digital society skills is transversal.

Moreover, the open educational resources on the project website and its YouTube channel give also the wider public opportunities to develop their competencies. We recommend the reader to explore

- Re-Educo Outputs (see under IO1) - http://re-educo.eu/outputs/
- Re-Educo Active Learning for Digital Innovation - http://re-educo.eu/active-learning-for-digital-innovation/
- Re-Educo YouTube channel - https://www.youtube.com/@re-educo93

DISSEMINATION

Multiplier Events

06 June 2021
OMNIA ESPOON SEUDUN KOULUTUSKUNTAYHTYMÄ - (E10084565, FI)
Perspective and impacts for the future digital society. Comparative national report for exploring skills gaps and mismatches in digital field.

06 February 2022
HELLENIC OPEN UNIVERSITY - (E10209096, GR)
Digital start-ups for. digital innovation.

04 March 2023
CYPRUS COMPUTER SOCIETY - (E10149763, CY)
Promoting and rewarding excellence in teaching and skills development.

31 March 2023
INSOMNIA CONSULTING SOCIEDAD LIMITADA (E10201798, ES)
Improvement of Digital Skills to promote startups.

Newsletters[11]

- *Issue no. 1 July 2021*
- *Issue no. 2 December 2021*

[11] For downloading Newslletters: http://re-educo.eu/newsletter/

- *Issue no. 3 July 2022*
- *Issue no. 4 January 2023*

Final Publication

The final contribution of the RE-EDUCO consortium consists of the elaboration of a special issue focusing on the main results of the project *REthinking EDUcation COmpetencies. Expertise, best practices, and teaching in the Digital Era*, providing:
a) an overall framework on digital innovation and its impacts on the educational system;
b) *a needs analysis* focused on understanding new trends and competence profiles offered by digital transformation, and the perspectives of access to the labour market in a comparative way.
The main goal of the work is to reflect about the adaptation and new challenges for the educational systems to fit the changes and contribute to reducing the mismatch between job supply and demand.
The special, edited by Stefania Capogna, Danila Scarozza and Manuela Minozzi, *Active Citizenship for The Digital Society. Expertise, Best Practices and Teaching In The Digital Era,* in Quaderni di Comunità Persone, Educazione e Welfare nella società 5.0. Anno 3 n. 1/2023, Rome, Eurillink University Press, aims to:

- reconstruct a theoretical framework about *active citizenship* for a digital society, as requested by *digital socie*ty (World Economic Forum, 2016; OECD, 2018)
- reconstruct the framework of information and data helpful in leading policy strategies, towards a more informed and person-oriented digital culture;
- propose an "integrated approach" in digital innovation in teaching-learning environment;
- offer a general framework for the comprehension of problems and opportunities connected to the digital transformation and its impact on the education system and society;
- promote digital innovation and the sharing of best practices among partners and stakeholders.

References

Capogna, S., Cianfriglia, L., Cocozza, A. (a cura di) (2020). *Digital Culture for Educational Organizations. Guidelines for Teachers and Education Agencies,* Roma, Eurilink University Press.

Capogna S., Musella F., Cianfriglia L. (a cura di) (2021). Analisi sulla didattica a distanza durante l'emergenza COVID-19. Roma: Eurilink Press.

Capogna S. Makrides G., Vassilis S. (2023). The European Higher Education Area in front of the Digital Challenge. Patras University Press (In press).

Carretero S., Vuorikari R. and Punie Y. (2017), The Digital Competence Framework for Citizens with eight proficiency levels and examples of use, Luxembourg, Publications Office of the European Union. Available at: https://publications.jrc.ec.europa.eu/repository/bitstream/JRC106281/webdigcomp2.1pdf_(online).pdf (Last access 11-12-2020).

Cedefop (2019), Future employment growth of ICT professionals in European countries, Skills Panorama. Available at: https://skillspanorama.cedefop.europa.eu/en/analytical_highlights/ictprofessionals-skills-opportunities-and-challenges-2019-update#_what_are_the_trends_for_the_future___2 (Last consultation 11-12-2020).

EE.CC. (2016), ICT for work: Digital skills in the workplace, European Commission

EE.CC. (2020/a), *Digital Education Action Plan (2021-2027) - Resetting education and training for the digital age:* https://education.ec.europa.eu/focus-topics/digital-education/action-plan (Last consultation 11-12-2020).

EE.CC. (2020/b) *Pact for Skills*, European Commission: https://pact-for-skills.ec.europa.eu/index_en (Last consultation 11-12-2020).

EE.CC. (2020/c), *Communication from the Commission to the European Parliament, the Council, the European economic and social committee and the committee of the regions on achieving the European Education Area by 2025*: https://ec.europa.eu/education/sites/education/files/document-library-docs/eea-communication-sept2020_en.pdf (Last consultation 11-12-2020).

European Commission (2016), Towards a European Quality label for ICT industry training and certification, viewed 1 June. Available at: https://www.eskills-quality.eu/index.php?id=854 (Last consultation 11-12-2020).

European Commission (2020), Pact for skill. Available at: https://ec.europa.eu/social/vocationalskills- week/european-vocational-skills-week-2020session-reports_en (Last consultation 11-12-2020).

Heeks, R. (2020). ICT4D 3.0? Part 1—The components of an emerging "digital-for-development" paradigm. The Electronic Journal of Information Systems in Developing Countries, 86(3), e12124. Available at: https://doi.org/10.1002/isd2.12124 (Last consultation 11-12-2020).

Kadry, S., Safieddine, F. (2016). Cooperative Active Learning Methodology in Mathematics. Proceedings of EDULEARN16 Conference 4th-6th July 2016, Barcelona, Spain pp. 4039-4045).

Khanna P., (2019), The future is Asian, Simon & Schuster, New York.

Manyika J., Chui M., Miremadi M., Bughin J., George K., Willmott P.,Dewhurst M., (2017), A future that works: automation, employment, and productivity, McKinsey Global Institute Available at: https://www.mckinsey.com/~/media/mckinsey/featured%20insights/Digital%20Disruption/Harnessing%20automation%20for%20a%20future%20that%20works/MGI-A-future-that-works-Executivesummary.ashx (Last consultation 11-12-2020).

OECD (2018) The Future of Education and Skills. Organisation for Economic Co-operation and Development (Available at: www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf

Schwab K. (2019). The Global Competitiveness Report 2019. World Economic Forum, Geneva. Available at: http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf (Last consultation 11-12-2020).

Toynbee A. (2004), La rivoluzione industriale, Odradek Editore, Roma.

World Economic Forum (2016), The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution, Cologny/Geneva, World Economic Forum.

World Economic Forum (2018), The Global Risks Report 2018. 13th Edition, World Economic Forum Global Challenge Insight Report, Geneva, 2018, pag. 8-17. Available at: http://www3.weforum.org/docs/WEF_GRR18_Report.pdf (Last consultation 11-12-2020).

Sitography

Digital Opportunity traineeships: boosting digital skills: https://ec.europa.eu/digital-single-market/en/digital-opportunity-traineeships-boosting-digitalskills-job (Last consultation 11-12-2020).

European Commission - International Standard Classification of Occupations (ISCO): https://ec.europa.eu/esco/portal/escopedia/International_Standard_Classification_of_Occupations__40_ISCO_41_ (Last consultation 11-12-2020).

European Commission - Statistical classification of economic activities in the European Community (NACE): https://ec.europa.eu/esco/portal/escopedia/Statistical_classification_of_economic_activities_in_the_European_Community__40_NACE_41_ (Last consultation 11-12-2020).

ICT technicians: skills opportunities and challenges (2019 update): https://skillspanorama.cedefop.europa.eu/en/analytical_highlights/ict-professionals-skillsopportunities-and-challenges-2019-update#_what_are_the_trends_for_the_future___2 (Last consultation 11-12-2020).

ICT professionals: skills opportunities and challenges (2019 update) - "How can these skill needs be met?": https://skillspanorama.cedefop.europa.eu/en/analytical_highlights/ict-professionals-skillsopportunities-and-challenges-2019-update#_how_can_these_skill_needs_be_met (Last consultation 11-12-2020).

ICT professionals: skills opportunities and challenges (2019 update) - Tasks and skills: https://skillspanorama.cedefop.europa.eu/en/analytical_highlights/ict-professionals-skillsopportunities-and-challenges-2019-update#_tasks_and_skills (Last consultation 11-12-2020).
Skills Forecast:
https://www.cedefop.europa.eu/en/publications-and-resources/data-visualisations/skills - forecast
(Last consultation 11-12-2020).

Skills and Jobs Platform: project team starts work: https://ec.europa.eu/digital-single-market/en/news/european-digital-skills-and-jobs-platformproject-team-starts-work (Last consultation 11-12-2020).

Skills in online job advertisements:
https://skillspanorama.cedefop.europa.eu/en/dashboard/skills-online-jobadvertisements?country=EU&occupation=#1 (Last consultation 11-12-2020).

Skills Panorama:
https://skillspanorama.cedefop.europa.eu/en (Last consultation 11-12-2020).

Stemcoalition.eu:
https://www.stemcoalition.eu (Last consultation 11-12-2020).

The Digital Competence Framework for Citizens:
https://publications.jrc.ec.europa.eu/repository/bitstream/JRC106281/webdigcomp2.1pdf (online).pdf (Last consultation 11-12-2020)

The European Institute of Innovation and Technology (EIT):
https://ec.europa.eu/education/policies/innovation-in-education/the-european-institute-ofinnovation-and-technology-eit_en (Last consultation 11-12-2020).

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More information: http://re-educo.eu/

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