Computational Thinking
for education on-line

Good practices

Name of the initiative

Computational Thinking School

Description of activities

Certificated online training and classroom practice.

Country

Spain

Location

Spain

Source of financing

Spanish Government

Duration time of the initiative

2018- today

Skills and goals

- Teacher Training on Computational Thinking

Website/E-mail /Other contact info

https://www.educacionyfp.gob.es/dam/jcr:591878ca-756a-46ca-8b75-fe3f129776e5/dossier-proyectoepcia-curso2020-2021.pdf

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Computer Science Teachers Association

Description of activities

- Shares the latest best practices in K-12 computer science education
- Creates local communities across the US + Canada that make sure every computer science teacher has a home.
- Builds the largest teacher-led computer science professional development event in the world each year!
- Provides access to exclusive discounts on courses and tools that will take your teaching practice to the next level.

Country

USA+Canada

Location

Regional headquarters, virtual

Source of financing

Membership + institutional partnerships + donations

Duration time of the initiative

2018- today

Skills and goals

- Create a strong environment to support K–12 educators

Website/E-mail /Other contact info

https://www.csteachers.org/

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Pensamiento Computacional

Description of activities

Single courses aimed at creativity and experimentation skills development for teacher training and school students:

-Android apps with APPInventor

-HTML5 and JavaScript code programming

-3D printing

-Scratch Jr

-Robotics workshops

Country

Uruguay

Location

Uruguay-virtual

Source of financing

ProFuturo program: Fundación Telefónica-Movistar + La Caixa

Duration time of the initiative

2014- today

Skills and goals

- Computer science, engineer thinking and problem solving skills and competences promotion to cover the gap on basic education training

Website/E-mail /Other contact info

https://www.fundaciontelefonica.uy/educacion/profuturo/pensamiento-computacional/

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

ISTE International Society for Technology in Education

Description of activities

Digital citizenship, STEAM in education, OER, AI in education, Teacher Education, CT, Online learning… support for teachers and workshops

Country

USA

Location

Oregon-Virginia,

USA

Source of financing

Non profit organization

Duration time of the initiative

1979- today

Skills and goals

- Help educators around the world use technology to solve tough problems in education.

Website/E-mail /Other contact info

https://www.iste.org/

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Txac planet

Description of activities

Educational kids TV show about Computational Thinking

Country

Spain

Location

Basque Country

Source of financing

Basque Country

Government

Duration time of the initiative

2020-2021

Skills and goals

- Computational Thinking skills introduction for young kids

Website/E-mail /Other contact info

https://www.eitb.eus/eu/hiru3/txac-planet/

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Compus

Description of activities

Collection of board games focused on the computational thinking development. Games: -Moon:1110011, -Archers of Nand, -Activity book

Country

ERASMUS+, Spain,

Romania, Poland

Location

ERASMUS+, Spain

Source of financing

Private

Duration time of the initiative

24 months

Skills and goals

- Boosting computational thinking skills on high schoolers

Website/E-mail /Other contact info

https://compus.deusto.es/

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Code Week School label

Description of activities

In order to apply to become a Code Week School, we ask aspiring schools to:

- Have at least 5% school staff (pedagogical staff) contributing to the activities part of the Code Week School label in the coming 2 years.

- Have organised at least 6 high-quality Code Week activities in either of the previous two academic years: 2020/2021 and/or 2021/2022, which correspond to the two past editions of Code Week : 2020 and 2021.

-Count with the school's principal or headmaster/mistress approval and support of the application.

- Continue being active for a period of two academic years (2022/2023 and 2023/2024) after awarding the Label, by creating a two-year plan detailing the integration of coding and computational thinking across the curriculum and contribution to Code Week.

Country

France, Greece, Italy, Netherlands, Slovenia, Spain

Location

Quality label

Source of financing

EU funding

Duration time of the initiative

2 years plan

Skills and goals

- Boosting the implementation of Computer related skills trainings at schools

Website/E-mail /Other contact info

https://ec.europa.eu/eusurvey/runner/EUCodeWeek-SchoolLabel-Application-2022

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

10th Conference of Computer Science in Greece

Description of activities

Computer Science, Computational Thinking and Educational Robotics.

Country

Greece

Location

Athens, Greece

Source of financing

Conference visitors,

Municipality of Athens

Duration time of the initiative

3 days

Skills and goals

- To inform Computer Science Teachers about the potential of Computational Thinking

Website/E-mail /Other contact info

https://bit.ly/3unPzui

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Bebras® Challenge in Greece

Description of activities

This is the Greek National CT contest for Primary and Secondary Pupils.

Country

Greece

Location

Athens, Greece

Source of financing

Participating Members and sponsors

Duration time of the initiative

1 days

Skills and goals

- Competition, cooperation, CT Skills, CT dissemination

Website/E-mail /Other contact info

https://bebras.gr/

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

The Contribution of Computational Thinking to the Preparation of Tomorrow's Citizen

Description of activities

There are two lectures about the topic of Computational Thinking for in Public Schools and about the life after School.

Country

Greece

Location

Thessaloniki, Online

Source of financing

Free of charge

Duration time of the initiative

1 days

Skills and goals

- Computational Thinking awareness

Website/E-mail /Other contact info

https://blogs.sch.gr/webinarspe1920/tag/computational-thinking/

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Computational Thinking & Visual-Spatial Intelligence for Elementary High School Students

Description of activities

Computational Thinking courses for Primary and Secondary Schools pupils

Country

Cyprus

Location

Online

Source of financing

Participants pay fees

Duration time of the initiative

8 months

Skills and goals

- Abstraction, Evaluation, Algorithmic Thinking, Generalization, Decomposition

Website/E-mail /Other contact info

https://www.epiteugma.com/mathimata-programmata-seminaria-leykosia-kypros/mathites-prodimotikis-dimotikou-gymnasiou-lykeiou/computational-thinking-visual-spatial-intelligence/

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Computational Thinking courses

Description of activities

Computational Thinking courses for Primary and Secondary Schools pupils

Country

Greece

Location

Lamia, Karaiskaki 72

Source of financing

Free of charge

Duration time of the initiative

3 weeks

Skills and goals

- Abstraction, Evaluation, Algorithmic Thinking, Generalization, Decomposition

Website/E-mail /Other contact info

https://bit.ly/3wutEnX

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

PACT (Programming ∧ Algorithms ⇒ Computational Thinking)

Description of activities

The PACT programme aim of introducing students to core concepts in the discipline of Computer Science.

A number of Irish secondary schools took part in a pilot study, the goal of the PACT programme is to guide students through the key topics in programming and algorithms towards the ultimate goal of studying the process of computation via Computational Thinking.

Country

Ireland

Location

Irish secondary schools

Source of financing

Duration time of the initiative

Starting in

September 2013

Skills and goals

- Programming
- Designing algorithms
- Computational thinking.

Website/E-mail /Other contact info

https://algorithmicthinking.org/

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

CODING4GIRLS project

Description of activities

The project aims to close the gender gap by effectively addressing computer science skills in the late basic school years and promoting equal opportunities between girls and boys in computer science careers. The team have produced a learning environment including two platforms, one for teachers and one for students for the development of programming skills among girls and boys through serious games.

Country

Greece, Turkey, Italy, Slovenia and Portugal

Location

Greece, Turkey, Italy, Slovenia and Portugal

Source of financing

EU-Track Association co-funded by European Commission under Erasmus+ Programme

Duration time of the initiative

2018

Skills and goals

- developing programming skills among girls through serious games
- provide teachers with the information they need for enhancing their teaching on programming through the proposed serious games approach and design thinking learning methodologies
- build the skills of teachers on the integration of ICT into instructional practices through supporting content

Website/E-mail /Other contact info

coding4girls2018@gmail.com

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

TACCLE 3 – Coding Project

Description of activities

The website was created where users can access to different kinds of resources organized by the following categories: Using logic; Algorithms; Creating + debugging programs; Controlling things on the top menu

It corresponds to the curriculum areas and underpins the schemes of work that in turn form the basis for the lessons that can be delivered in the classroom.

Under each heading, teachers can find a variety of ideas, lessons, and materials directly related to classroom activities.

Teachers that are interested in participating in TACCLE 3 – Coding may do it in several ways:

- Visiting the website to access to the resources.
- Writing news related to coding in the schools.
- Making learning activities/lessons.
- Making resource reviews (products, tools, books, courses, etc.) oriented to other teachers (García-Peñalvo 2016e).

Country

Belgium, UK, Germany, Estonia, Spain, Finland

Location

Accessible online

Source of financing

European Union Erasmus+ KA2 Programme

Duration time of the initiative

September 2015 and ended at October 2017

Skills and goals

- Programming,
- Control technology,
- Computational/logical thinking

Website/E-mail /Other contact info

taccle3.eu

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Oficinas de Comunicacao Alternativa, Aumentativa e Criativa, com criancas, usando interfaces computacionais vestıveis e tangıveis

Description of activities

With the objective of analyzing the performance of children in activities related to the development of skills associated with computational thinking, we carried out two workshops. The activities consisted of creating a program on a tablet using ScratchJr7 following the proposed methodology. The activities were carried out with six educators and 14 children from 8 to 11 years. At the beginning of each session, they were guided on the purpose of the task, and the methodology and its correspondent model was explained.

Country

Brazil

Location

The workshops were conducted at PRODECAD4 with the support of members of the InterHad group

Source of financing

Supported by CAPES, CNPq (grants #308618/2014 – 9 and #307560/2016 – 3), and FAPESP (grant #2015/16528–0)

Duration time of the initiative

August and September of 2017.

Skills and goals

- Programming
- Control technology
- Computational/logical thinking

Website/E-mail /Other contact info

https://interhad.nied.unicamp.br/front-page

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Trastea.club

Description of activities

The main goal of Trastea.club was to provide a place to support skills involving programming, computing robotics and related issues.

The university organized more than 180 workshops attended by more than 3.200 students from 35 different schools. With the aim of supporting the methodological and technical changes needed to integrate new skills in the classroom, 216 teachers also benefited from our training course.

Country

Spain

Location

Bilbao

Source of financing

University of Deusto

Duration time of the initiative

Start January 2014

Skills and goals

- Programming
- Control technology
- Computational/logical thinking

Website/E-mail /Other contact info

http://www.trastea.club/

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Employing Computational Thinking in General Teacher Education

Description of activities

In the paper, the questions to be answered are: which design principles can guide the creation of a course aiming at conveying necessary competences, and what content is relevant for teachers of all subjects. Therefore, various individual research results are outlined and intertwined.
Building upon these results, five blended-learning modules for pre-service teachers in Germany are presented. The first iteration is then evaluated with regards to the design principles.

Country

Germany

Location

Germany

Freie Universität Berlin, Germany

Source of financing

-

Duration time of the initiative

2019

Skills and goals

- Teacher training courses.
- Show the Importance of Skills Like Collaboration or Creativity.

Website/E-mail /Other contact info

https://computingeducation.de/pub/2019_Seegerer-Romeike_CTE19.pdf

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Building Elementary Teacher Readiness and Capacity for Computational Thinking within Core Curriculum (BETR-CT Project)

Description of activities

Key to our innovative approach is the implementation of a differentiated professional learning model for elementary teachers that recognizes and appreciates each individual teachers' current readiness to integrate computational thinking concepts, practices, and principles across their core classroom curriculum. Our model then builds upon that individualized readiness with a strategic and comprehensive set of professional learning experiences throughout the school year using an integrated approach to the use of computational thinking tools and resources within instruction.

Country

USA

Location

USA

"Project tomorrow" organization

Source of financing

"Project tomorrow" organization

Duration time of the initiative

2021-

Skills and goals

- To help 120 elementary teachers in the 2nd, 3rd, 4th and 5th grade levels at the project school sites learn how to integrate Computational Thinking (CT) concepts and principles within their existing core curriculums.

Website/E-mail /Other contact info

https://tomorrow.org/about/team.html

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

COEDU-IN Project: an inclusive co-educational project for teaching computational thinking and digital skills at early ages

Description of activities

This project explores the current state of teaching and learning computational thinking and programming in early childhood education in an inclusive manner. Moreover, the lack of diversity and inequality is particularly latent in science, Technology, Engineering, and Mathematics (STEM) fields.

Country

Spain

Location

Spain

Source of financing

Fundación Caja Canarias and Fundación La Caixa.

Duration time of the initiative

2020

Skills and goals

- To analyze state-of-the-art related to computational thinking and educational robotics at regional, national, and international levels in early childhood education.
- To design a constructive proposal for inclusive co-educational teaching of computational thinking and programming.

Website/E-mail /Other contact info

https://repositorio.grial.eu/bitstream/grial/2421/1/COEDU-IN_post_print.pdf

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

Work in Progress: Integrating Computational Thinking in STEM Education Through a ProjectBased Learning Approach

Description of activities

This work in progress describes the design of a project-based, STEM +C (Computing) curriculum for 4th to 6th grade students in an afterschool setting, which is part of a large NSF-funded STEM+C project. The paper reports the preliminary outcome of the implementation of the first two STEM+C projects that focuses on student attitudes toward STEM and the computational thinking revealed during students' scientific inquiry and problem solving processes.

Country

USA

Location

USA

Source of financing

Boise State University

Duration time of the initiative

2018

Skills and goals

- The design of the STEM+C curriculum was guided by a project-based learning (PBL) approach. PBL is "a systematic teaching method that engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions".

Website/E-mail /Other contact info

https://scholarworks.boisestate.edu/cgi/viewcontent.cgi?article=1190&context=edtech_facpubs

Co-funded by the European Union

Computational Thinking
for education on-line

Good practices

Name of the initiative

CS for ALL: Teaching All Computational Thinking through Inclusion and Collaboration (TACTIC)

Description of activities

Focus on developing inclusive computer science experiences for students with disabilities and those at risk for academic failure in elementary and middle school settings.

Country

USA

Location

USA

Source of financing

The University of Florida

Duration time of the initiative

2016-2020

Skills and goals

- Understand barriers to inclusion of students with disabilities in CS education,
- iteratively develop instructional strategies
- advocate for the inclusion of students with disabilities' full participation in CS education.

Website/E-mail /Other contact info

https://ctrl.education.ufl.edu/projects/tactic/

Co-funded by the European Union