

ERGO PROJECT

Good Practices for Empowering Girls' Participation in STEAM

Activity A2.3 · WP2 – ERGO Technical & Pedagogical Framework

Ediciones Octaedro (P4) & EDUMOTIVA (P2)

2nd Project Meeting · Athens · 20–21 April 2026

15-minute presentation

ERGO

Educational Robotics Goes Online

Project:

KA220-SCH
2025-1-PL01

Partners:

PL · GR · IT · ES

*Co-funded by
the European Union*

12 Good Practices Reviewed

EU · Erasmus+
Horizon · School
Community · Digital

The Gender Gap in STEAM: Why It Matters

CONTEXT

32.8%

of EU STEM graduates are women

She Figures 2024

1 in 5

ICT specialists in Europe are
women

Digital Decade 2024

89.6%

ERGO teachers: no gender strategy

ERGO Needs Analysis

40%

EU 2030 target: female STEM grads

EU STEM Strategic Plan

Girls outperform boys in digital literacy at early ages (ICILS 2023) — yet self-select OUT of ICT as they progress through school.

This points to pedagogical and cultural interventions — not aptitude — as the key lever for change.

81.2%

of ERGO survey respondents identified gender-inclusive strategies as a priority for their schools.

What Is This Review? Purpose & Scope

A2.3

PURPOSE

Inform

Chapter 2 of the ERGO Teacher Guidebook
'Promoting Girls' Engagement in Robotics'

Feed

models & scenarios for WP3 eCourse and WP4 participatory design workshops

Guide

inclusive design of WP5 pilot activities and gender tracking metrics

SCOPE: 12 PRACTICES

EU Flagship Programmes

Girls Go STEM, ESTEAM Fests, BridgeSTEAM

Erasmus+ & Horizon Europe

STREAM IT, STEAMBrace, EQUALS-EU

School-embedded & Community

Girls in ICT Talks (Malta), greenlight for girls

Coding & Digital Tools

EU Code Week GCIB, Girls Who Game, Girls Code Too

Robotics & Rights

EU Delegation Geneva – Programming, Robotics & Rights

12 Good Practices at a Glance

OVERVIEW

3.1	Girls Go STEM (EIT) <i>48,000+ girls • 35 countries • free online STEAM modules • AI, robotics, sustainability</i>	EU Flagship
3.2	ESTEAM Fests (EISMEA) <i>Tech workshops + role models + confidence-building • FabLab visits • ministerial co-org</i>	EU Flagship
3.3	BridgeSTEAM <i>93% ↑ STEAM interest • 80% ↑ confidence • 250+ graduates • alumnae network</i>	EU Flagship
3.4	STREAM IT (Erasmus+) <i>Structural barriers research • simulators • 3D printers • female engineer panels</i>	Erasmus+
3.5	Girls in ICT Talks (Malta) <i>9 schools • Year 7 girls • Women Ambassadors • embedded in school hours</i>	School
3.6	EU Code Week - GCIB <i>3-4h sprints • Replication Kit • female role models • online/in-person</i>	Code Week
3.7	Robotics & Rights (Geneva) <i>150 girls aged 6-17 • Pannylr robot • gender rights framing</i>	Robotics
3.8	STEAMBrace (Horizon EU) <i>Arts-integrated STEAM • STEAM Alliance for Europe • STEAM Week</i>	Horizon EU
3.9	Girls Who Game (Dell) <i>Minecraft → coding • 75+ clubs • mentorship • computational thinking</i>	Digital
3.10	Girls Code Too (UK) <i>Free micro:bit workshop guides • physical computing • no specialist training</i>	Digital
3.11	greenlight for girls <i>60,000+ girls • 39 countries • volunteer STEM role models • free events</i>	Community
3.12	EQUALS-EU (H2020) <i>Gender equity in digital innovation • hackathons • open Gender Equity Tools</i>	Horizon EU

EU Flagship Programmes

3.1 – 3.3

3.1 Girls Go STEM (EIT)

Free, online STEAM education for girls aged 14–19

48,000+ girls across 35 countries
18 modules in 24 languages

Topics: AI, robotics, sustainability, circular economy
STEM Challenge: 85 teams, 20 showcased at STEM Forum

ERGO relevance: Model for online challenge-based WP4 projects

3.2 ESTEAM Fests (EISMEA)

Events for girls & women across Europe

120 girls aged 12–16 at Berlin Girls Fest 2024
~130 women at Milan Women Fest 2024

Tech workshops + AI + leadership + public speaking
FabLab visits + bioeconomy incubator
1st co-organisation with a government ministry

ERGO relevance: Model for WP5 multiplier events

3.3 BridgeSTEAM

Free 2-day coding programme, girls aged 14–16

93% increased interest in STEAM careers
89% improved self-confidence
250+ graduates incl. Ukrainian refugee girls

Coding + gender equality + global challenges
Alumnae network · SheSpeaks podcast

ERGO relevance: Benchmark metrics for WP5 evaluation

Erasmus+ & Horizon Europe Projects

3.4 • 3.8 • 3.12

3.4 STREAM IT (Erasmus+)

Erasmus+

Focus: structural & institutional barriers to girls in STEAM

Target: girls aged 14–18

Girls in ICT Day: 20 girls explored simulators, 3D printers & coding workshops — with 5 female engineers

Workshop series • mentoring • collaborative networks

ERGO relevance: Systemic framing of gender inclusion; model for WP3 webinars with female professional panels

3.8 STEAMBrace (Horizon EU)

Horizon EU

Arts-integrated STEAM — integrating creativity with science

Establishes STEAM Alliance for Europe
STEAM Week for future women innovators

Pilots: 120+ students, 9 teachers
Collaborates with STREAM IT & Road-STEAMer

ERGO relevance: Arts + STEAM reinforces the 'A';
EU dissemination channel for ERGO results

3.12 EQUALS-EU (H2020)

H2020

Gender equity in social innovation & digital inclusion

29 EU countries + Global South

Hackathons • innovation camps • online & in-person mentoring
Open Gender Equity Tools for policy & practice

Professional network for women in digital

ERGO relevance: Policy framework; open tools complement ERGO's inclusive WP4 design

School-Embedded & Community Models

3.5 • 3.11

3.5 Girls in ICT Talks – Malta (2024–2025)

9 schools

State + church institutions · Year 7 girls

Ambassadors

MDIA Women Ambassadors share personal journeys in ICT

Key message

Curiosity & creativity matter more than perfect grades

Embedded

Sessions within normal school hours — maximises reach

Partnership

Digital authority + career guidance + church education dept

ERGO relevance

Scalable institutional model; accessible language over tech jargon

3.11 greenlight for girls (g4g)

Reach

60,000+ girls · 13,000+ STEM volunteers · 39 countries · 500+ events

g4g Day

One-day event: 100+ hands-on workshops run by volunteer STEM professionals

Focus

Less advantaged communities · free & open access

Erasmus+ link

Partner to EITIC-EU project — open resources for teachers & parents

Brussels HQ

Based in the heart of Europe; active in BE, DK, DE, PT, UK

ERGO relevance

Multiplier event model; equity focus matches ERGO school partner profiles

Coding & Digital Tools for Girls

3.6 • 3.9 • 3.10

3.6 EU Code Week – GCIB

Format

Girls Code it Better Sprints: 3–4h · online or in-person

Scale

1.34M participants · 40% female · EU-wide

Replication Kit

Step-by-step guide · any teacher can run a Sprint

Timing

Girls in Digital Week: March 2026 = ERGO training period

ERGO

Same networks as EDUMOTIVA · immediate post-training replication

3.9 Girls Who Game (Dell)

Platform

Minecraft: Education Edition · design + code + SDG challenges

Scale

75+ clubs per cohort · USA, Canada, expanding globally

Mentorship

STEM professionals share non-linear career journeys

Key insight

'Video games speak to girls who wouldn't engage with code'

ERGO

Gaming as simulation entry point · mentorship model for WP3

3.10 Girls Code Too (UK)

Format

Free downloadable micro:bit workshop guides for teachers

Access

No specialist training · no expensive equipment

Technology

Physical computing + digital coding · making meets programming

EU reach

Used in Athens refugee camps, British Council Spain, Balkans

ERGO

Replicable by school partners · micro:bit bridges simulation + making

3.7

Programming, Robotics & Rights for Girls

EU Delegation to the UN · Geneva

150 girls aged 6–17 · 1-day workshop

Activities:

- Coding an electronic light card (hepiaLight)
- Programming the collaborative robot PoppyJr
- Discussions on their right to education in tech

The Key Innovation

Dual framing: technical skill-building ALONGSIDE civic awareness of gender equality as a fundamental right.

Connecting robotics to social and rights contexts gives girls a reason to care about technology beyond its technical dimensions — especially powerful for purpose-driven learners.

ERGO Relevance

Model for linking ERGO robotics pilot activities to a gender equality narrative in the Teacher Guidebook and WP3 eCourse content.

Pedagogical Design Principles That Work

KEY LESSONS 5.1

01

Real-world challenges

Sustainability, health, equality, community. Girls are motivated by purpose-driven technology.

02

Creative entry points

Games, art, storytelling — not abstract coding exercises. Lower self-exclusion barriers.

03

Integrate the Arts

Arts-based approaches increase girls' engagement, self-expression, and sense of belonging (STEAMBrace).

04

Low-floor design

Accessible with no prior experience, yet offering depth for those who explore further.

05

Rights & career context

Pair technical activities with gender equality discussion and career possibilities.

06

Visible female role models

Invite professionals, feature women-led projects, highlight female researchers and engineers.

Structural Conditions for Success

KEY LESSONS 5.2

01

Train teachers first

Cascading models empowering educators — the most sustainable and scalable approach at European level.

02

Free & equipment-free

No financial barriers. No expensive kits. Addresses socio-economic disparities in under-resourced schools.

03

Embed in school hours

Avoid extra-curricular 'opt-in' dynamics that self-select only the most motivated girls.

04

Connect to EU networks

EU Code Week · eTwinning · Scientix · Girls Go STEM · EQUALS-EU — amplify reach and sustainability.

05

Seek institutional endorsement

Education authorities, universities, or ministries signal legitimacy and encourage school participation.

Synergy Opportunities for ERGO Partners

KEY LESSONS 5.4

EDUMOTIVA (P2)	Connect ERGO teachers to EU Code Week ambassador network & Girls in Digital Replication Kit → <i>GCIB Sprints alongside WP5 pilots</i>	EDUMOTIVA
All school partners	Girls in Digital Week (March 2026) falls within the ERGO teacher training period → <i>organise a GCIB Sprint at no extra cost</i>	All partners
IES Mar Azul (P7) & partners	Register ERGO pilot activities on the EU Code Week activity map each October → <i>European visibility for local practice</i>	IES Mar Azul
Octaedro (P4)	Promote gender-inclusive outputs through El Diario de la Educación → <i>millions of Spanish-speaking educators</i>	Octaedro
All partners	Connect with STEAM Alliance for Europe (STEAMBrace) and EQUALS-EU network → <i>position ERGO in the broader European gender-inclusive STEAM landscape</i>	All partners
Evaluation team	Contribute gender participation data to EU Code Week & EU STEM Coalition tracking systems → <i>demonstrate European-level impact</i>	WUT / ALL

Evaluation Metrics & Benchmarks for ERGO

KEY LESSONS 5.3

93%

of girls: increased interest in STEAM careers

BridgeSTEAM → ERGO pilot target

89%

of girls: improved self-confidence

BridgeSTEAM → ERGO pilot target

Additional ERGO Evaluation Metrics

Drop-out rate

Girls during pilot activities

ERGO target: ≤ 1 in 10

Teacher confidence

Implementing inclusive robotics after ERGO training

ERGO target: ≥ 70% positive

Qualitative data

Girls' sense of belonging and engagement in STEAM

Reflections collected post-pilots

What the Evidence Tells Us

Effective gender-inclusive STEAM education shares a common DNA:

Hands-on &
purposeful

Free of heavy
resource requirements

Embedded in supportive
adult relationships

Connected to broader
European networks

ERGO is well positioned to draw on all of these practices. Its teacher-training-first model, simulation-based approach, and connections to EU Code Week, eTwinning, and Scientix all align with the structural conditions for success identified in this review.

Next Steps →

A2.3 findings → Chapter 2 Teacher Guidebook | WP3 eCourse | WP4 OER design | WP5 pilot evaluation framework

This review will be updated after WP5 pilots to incorporate evidence from ERGO's own implementation.