STREAMING GIRLS AND WOMEN INTO STEAM EDUCATION, INNOVATION AND RESEARCH

STREAM IT

D2.1 Research report on previous and running initiatives and European projects on STEAM education and gender equality

06.08.2024

STREAM IT

Project full title

STREAMING GIRLS AND WOMEN INTO STEAM EDUCATION, INNOVATION AND RESEARCH

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STREAM IT

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D2.1 Research report on previous and running initiatives and European projects on STEAM education and gender equality

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AUTHOR(S)	Sanja Popovic Pantic Daniela Kuzmanovic Nadja Cirovic
REVIEWER(S)	Evelina Šalavėjienė (SVSTP) Katalin Oborni (HETFA)
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LIST OF ABBREVIATIONS

ABW Serbia	Association of Business Women of Serbia
Adfaber	Adfaber Association
AES	Silves Schools Group
AFA association	Association All For All
AFIST	Association of Women in Engineering, Science and Technology
AGRIGEP	Assessment and implementation of Agriculture and Life Science Universities' first Gender Equality Plans in widening countries
AISBL	European Schoolnet
AMIF	Asylum, Migration and Integration Fund
ATHENA	Approaches to Valorise the High ENtrepreneuriAl Potential of Migrant Women
BCWT	Bulgarian Centre for Women in Technology
CEISE	CESIE, Non-profit organisation
CIS	Commonwealth of Independent States
CUT	Cyprus University of Technology
DTS	Professional Development of Teachers to promote Design Thinking Skills and Academic Success of Students
EBAN	European Business Angels Network
EC	European Commission
EISMEA	European Innovation Council and SMEs Executive Agency
EIT	European Institute of Innovation & Technology
ELTE	Department of Media and Educational Informatics of the Faculty of Informatics
EQUAL-IST	Gender Equality Plans for Information Sciences and Technology Research Institutions
ERA	Environmental Risk Assessment
E-STEAM	Equality in Science, Technology, Engineering, Art and Mathematics
ETSE	Higher Technical School of Engineering
EU	European Union
EUN	European Schoolnet
F2F	Face to Face
FECYT	Spanish Foundation for Science and Technology, Ministry of Science, Innovation and Universities
GE	Gender Equality
GEP	Gender Equality Plan
GUN	Girl Up Neuroscience
HETFA	HETFA Research Institute
ICT	Information Communication Technologies
IEEE	Institute of Electrical and Electronics Engineers
IFIC	Institute of Corpuscular Physics
IMP	Institute Mihajlo Pupin
ITU	International Telecommunication Union

KMSC	Klaipėda Students' Self-Expression Center, Lithuania
LeTSGEPs	Leading Towards Sustainable Gender Equality Plans in research performing organisations
MATE	Hungarian University of Agriculture and Life Sciences
MOGIS	More Girls in STEAM
MOOC	Massive Open Online Course
NaTE	Association of Women in Science
NCP	National Contact Points
NGO	Non-Governmental Organisation
OTTER	Outdoor Science Education for a Sustainable Future
PKS	Serbian Chamber of Commerce
PTvT	Dutch national STEM platform
RAPIV	Regional Agency for Entrepreneurship and Innovations
RPO	Research Performing Organisations
SPEAR	Supporting and Implementing Plans for Gender Equality in Academia and Research
STE(A)M	Science, Technology, Engineering, Arts and Mathematics
STEM	Science, Technology, Engineering and Mathematics
SVSTP	Sunrise Valley Science and Technology Park
UBB	Babes Bolyai University
UBU	Universidad de Burgos
UPC	Polytechnic University of Cartagena
UPM	Polytechnic University of Madrid
USAID	United States Agency for International Development
WE4Change	Girls and Women connecting for environmental change
WHTO	Centre of Expertise for its technical Development, AP The Hague
WiDS	Women in Data Science
ZEF	Centre for Development Research

EXECUTIVE SUMMARY

This report offers a detailed analysis conducted as part of the STREAM IT project, which seeks to tackle gender disparities in STEM education. The project aims to uncover institutional and structural obstacles that prevent young girls from pursuing STEM education and careers, create inclusive toolkits and approaches, and support skill development for all genders, with a special focus on girls aged 14-18. The report synthesises findings from desk research, project mapping, and interviews with key project stakeholders to present a thorough overview of gender-related challenges and effective strategies for enhancing inclusivity in STEM fields. Key sections of Deliverable D2.1. include:

- Introduction: Overview of the STRE(A)M IT project, its goals, and the context of the report. The report is structured into several parts: an executive summary, introduction cards detailing mapped initiatives by the project partners, and detailed presentations of selected projects and initiatives. It also includes analyses of challenges identified through interviews with project owners, addressing issues such as societal stereotypes, teaching methodologies, funding constraints, and gender disparities in STEM education.
- About Task 2.1 - Capitalization of Knowledge and Results: Task 2.1 involves capitalising on knowledge and results from previous and ongoing STEM education initiatives. This task includes conducting desk research and evaluating best practices to gather existing knowledge on gender equality and STEM education. The findings are compiled into fact sheets for public access. This report results from two subtasks under Task 2.1: mapping relevant projects and initiatives in STE(A)M and conducting interviews with experts. The deliverable was completed by Mihajlo Pupin Institute (IMP) with seven additional partners. The methodology for T2.1 was structured to streamline the execution of subtasks, facilitating the identification of best practices. Partners were asked to map relevant initiatives and identify key individuals for interviews.
- Methodology: 111 diverse projects/initiatives were collected by the seven partners, targeting various groups, with a focus on girls/women. Additionally, 17 face-to-face interviews were conducted to gather qualitative data on selected projects, all of which were used for further data analysis. Interviews were conducted with representatives of the most relevant projects to present their motivation, results, challenges, and recommendations for improving the participation of women/girls in STEAM.
- Analysis of Challenges: Identification of key barriers such as societal stereotypes, traditional teaching methodologies, and funding challenges, with specific emphasis on their impact on girls in STEM.
- Recommendations: Concrete recommendations for developing inclusive STEM educational programmes, targeting both girls and all genders at primary and secondary levels based on conducted interviews conducted by STRE(A)M IT project partners.

1. INTRODUCTION

In the first chapter of this Research Report, you will find basic information about the STRE(A)M IT project, the task under which this report was created, and basic information about the report itself.

1.1. STREAM IT PROJECT

The mission of the STREAM IT project is to introduce solutions widely usable by various stakeholders to implement actions suggested by "The European Manifesto for gender-inclusive STE(A)M education and careers".

STREAM IT seeks to address gender inequalities in STEM education by synthesising and validating previous and current initiatives and research results at regional, national, and EU levels. The project focuses on identifying gender-based institutional and structural barriers that hinder young girls' opportunities and motivation to enter STEM tertiary education and pursue careers in STEM fields.

The main goals of STRE(A)M IT are:

- Identifying Barriers: Identifying gender-based institutional and structural barriers that hinder young girls' opportunities and motivation to enter STEM tertiary education and pursue careers in STEM fields.
- Developing Toolkits: Developing gender- and diversity-inclusive, innovative STE(A)M toolkits and approaches.
- Supporting Skill Development: Supporting skill development and career opportunities in STEM for all genders, with a particular focus on young girls aged 14-18.
- Up-skilling Educators: Providing specific support and opportunities for STEM educators to enable them to practise gender- and diversity-responsive teaching.

The expected outcomes of the STREAM IT project include:

- Synthesised knowledge and validated results from previous and running initiatives on gender equality in STEM education.
- Innovative, gender- and diversity-inclusive STEAM toolkits and approaches.
- Enhanced skill development and career opportunities for young girls in STEM.
- Improved capacity of STEM educators to practise gender- and diversity-responsive teaching.

1.2. ABOUT TASK 2.1 - CAPITALIZATION OF KNOWLEDGE AND RESULTS

Task 2.1 focuses on capitalising on the knowledge and results of previous and ongoing initiatives related to STEM education and research and innovation (R&I). The task involves conducting desk research and evaluating best practices from the previous five years and ongoing EU, national, and regional initiatives. The findings are compiled into a fact sheet format, which is publicly accessible and usable within and beyond the STREAM IT project.

The primary objective of Task 2.1 is to gather existing knowledge on gender equality (GE) and STEM education to provide a foundation for subsequent project activities. This task aims to synthesise research results and conduct a meta-analysis on institutional barriers that young women face when entering tertiary STEM education and pursuing STEM careers.

1.3. ABOUT THIS DELIVERABLE

This report is a result of the two subtasks that are part of Task 2.1 (T2.1), including Subtask 1: Mapping of relevant projects and initiatives in STEAM, and Subtask 2: Interviews with experts. Additionally, there is Subtask 3: Evaluation of best practices, which is the subject of a separate deliverable. The output of this deliverable was completed by Mihajlo Pupin Institute (IMP). The task leader is the IMP, with 7 additional partners involved:

- CEISE (Non-profit organisation), Italy
- HETFA (Research Institute), Hungary
- IMP (Institute Mihajlo Pupin), Serbia
- RAPIV (Regional Agency for Entrepreneurship and Innovations)
- SV STP (Sunrise Valley Science and Technology Park), Lithuania
- UBB (Babes Bolyai University)
- UBU (Universidad de Burgos), Spain

To ensure coherence and streamline all three subtasks within Task 2.1, the methodology for T2.1 was structured so that the execution of Subtask 1 facilitates the implementation of Subtask 2 and simplifies the identification of best practices in Subtask 3. For instance, by mapping pivotal STEAM projects for girls and women in project partner's countries and across EU countries(funded by the EU), partners could identify the primary "owner" of each project, who would be the most pertinent individual to interview for Subtask 2. The pivotal projects mapped in the factsheet were further evaluated according to predefined criteria for selecting best practices. In short, partners were asked to map the most relevant city/province/national/regional/EU/global initiatives and projects, and eventually identify those that could be potentially considered as best practices.

1.3.1. METHODOLOGY FOR DESK RESEARCH

In total, 111 diverse projects/initiatives were collected by the seven involved partners: CEISE, HETFA, IMP, RAPIV, SV STP, UBB, and UBU.

Out of the 111 collected projects, 62 targeted girls/women, while the rest targeted educators, stakeholders, or both genders (students and pupils, regardless of gender). Additionally, partners conducted face-to-face (F2F) interviews with the owners of the selected previous (not older than 7 years) and ongoing EU, national/regional projects/initiatives in the field of STEAM education. In total, 17 interviews were conducted, with IMP completing 4 interviews while the implementing partners conducted the remaining thirteen.

From all the conducted interviews with the owners of various STEAM projects, it was observed that 10 of these projects were exclusively targeted at women and girls. This focus underscores a significant emphasis on addressing gender-specific challenges and promoting increased female participation in STEM fields, which often have traditionally seen lower female representation. In our selection process for interviews, priority was given to EU-based projects with a broader geographic reach and potentially higher impact, as these tend to provide more comprehensive insights into gender-focused initiatives. In contrast, the remaining 7 projects had a wider scope and were designed to be inclusive of both boys and girls. These projects aim to foster a more balanced environment by promoting equal opportunities and encouraging participation from all genders. By including a diverse range of projects, we ensure a comprehensive understanding of how different approaches can impact both gender-specific and inclusive efforts in the STEM field. This distinction helps clarify how some initiatives focus specifically on women and girls, while others are geared towards creating equal opportunities for all participants.

This collection of initiatives demonstrates collaborative efforts across different sectors to drive positive change and underscores the importance of tailored approaches to meet the needs of diverse target groups. Interviewees were selected among owners of projects/initiatives in STE(A)M, with a special focus on empowering girls/women to either choose STE(A)M for career development or build soft skills among those already involved in STE(A)M.

1.3.2. METHODOLOGY FOR CONDUCTING INTERVIEWS

F2F interviews aimed to support better presentation of the selected projects and initiatives, revealing challenges in their implementations and providing recommendations for future projects. Partners conducted interviews with representatives of the most relevant projects they identified. In the study, all 111 projects/initiatives are briefly presented (Chapter 3), with those supported by F2F interviews and targeting girls and women receiving more detailed coverage.

Interviews were conducted F2F (Face to Face) following guidelines designed for this purpose, providing interviewers with a structured format. During interviews, participants were asked to:

- Introduce themselves;
- Introduce the project/initiative;
- Present the motivation behind the project/initiative;
- Present the results;
- Share challenges faced during implementation and strategies for overcoming them;
- Provide recommendations to improve the participation of women/girls in STEAM and propose solutions to overcome identified barriers.

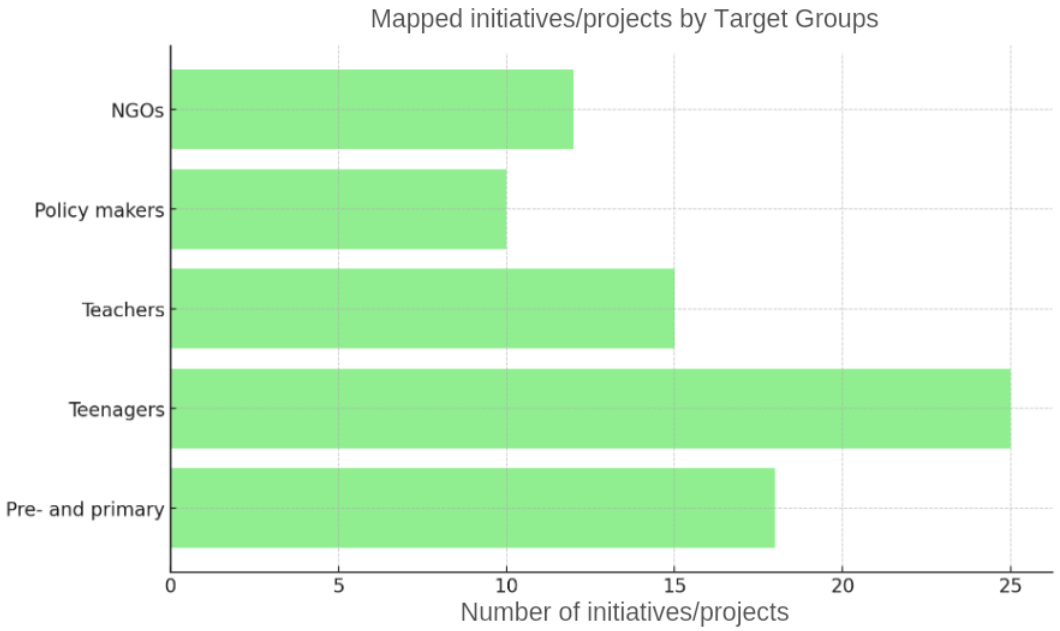
In some instances, partners inadvertently or intentionally conducted expert interviews with the owners of initiatives/projects that were marked as best practices, either by themselves in the last column of the Factsheets or by the IMP's evaluation. This interconnected approach ensured the coherence of the entire Task 2.1. For this purpose, a specific Excel table was created that encompasses 12 key questions to comprehensively illustrate the collected projects/initiatives. The template of the mapping table is in Figure 1.

Figure 1. Desk Research template table for data collection

Title of the project/initiatve	
INFORMATION ON THE PROJECTS/INITIATIVES	**Project/Initiative owner**
	Aim and main activities of project/ initiative
	Target group of the project/initiative indicate the target group(s) of the project/initiative - experts, students, schoolgirls, women in STEAM, women entrepreneurs, rural women, women from minorities etc…
	Start and end year of implementation (all projects/initiatives that started during 2018 and after will be mapped as relevant)
	Budget of the project/initiative(indicate the total budget of the project/initiative)
	Funding institution/organisation/company or other entity of the project/initiative (provide the name of the institution/organisation/company/other entity that provides funding of the project/initiative)
	Source of information (link to the website: Include the link to the website or online source where the information can be found)
	Language and format in which the project/initiative is available (ppt, video, pdf, audio/podcast) (Example: English, video)
	Thematic focus of the project/initiative (From the drop-down list, indicate whether the project/initiative primarily focuses on STEM (Science, Technology, Engineering, Mathematics) or STEAM (Science, Technology, Engineering, Arts, Mathematics)
	Territorial scope (From the drop-down menu, specify the territorial scope or reach of the project/initiative, such as the European Union (EU), region, country, city or province)
INFORMATION ON THE POTENTIAL GOOD (BEST) PRACTICES	**Please indicate if mapped project/initiative produced or resulted in a good (best) practice (from drop-down menu choose beetween YES and NO)**
	If yes, please provide a brief rationale for the good (best) practice resulting from the mapped project/initiative
	Please mark with "X" or checkmark which project/initiative you'll be conducting the interview with the owner

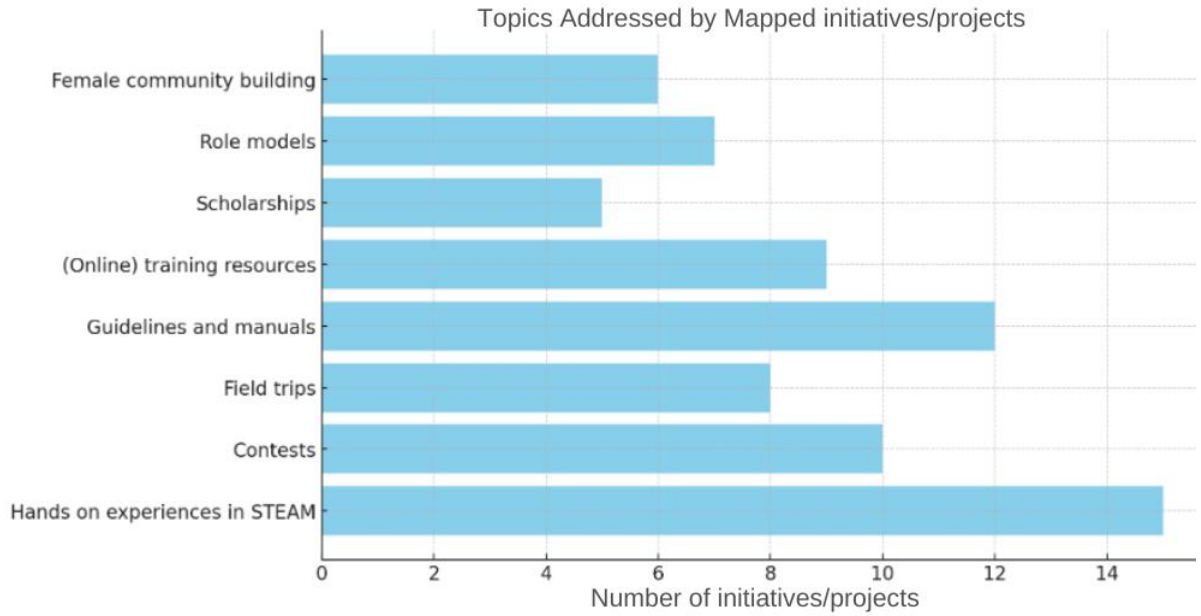
The following figure 2 provides an overview of the number of initiatives and projects mapped by target groups. This visualisation highlights the primary focus areas and intended beneficiaries of the mapped initiatives/projects. The data reveals that teenagers are the most frequently targeted group, followed by pre-primary and primary children, and teachers. NGOs and policymakers are targeted to a lesser extent. This distribution indicates a strategic emphasis on youth engagement and education, reflecting the importance placed on these demographics within the mapped initiatives/projects.

Figure 2. The graph is representing the number of mapped initiatives/projects by target groups.



The figure highlights that teenagers are the primary target group for the majority of the mapped initiatives/projects, followed by pre-primary and primary children and teachers. NGOs and policymakers have relatively fewer initiatives/projects targeting them. This distribution may reflect the strategic priorities of the organisations or entities mapping these initiatives/projects, focusing heavily on the youth and education sectors.
The following chart provides an overview of the number of initiatives and projects addressing various topics. This visualisation highlights the areas of focus and interest within the mapped initiatives/projects. It is evident from the data that hands-on experiences in STEAM receive the highest emphasis, followed by contests and field trips. Other significant topics include guidelines and manuals, online training resources, and role models. This distribution underscores the strategic priority given to practical, experiential learning and competitive engagement, alongside the provision of educational resources and support systems.

Figure 3. The graph represents the number of initiatives addressing various topics based on the mapped initiatives from the document.



The figure 3 highlights that hands-on experiences in STEAM are the primary focus for most of the mapped initiatives/projects, followed by contests, guidelines and manuals, and field trips. Topics such as female community building, role models, scholarships, and online training resources also receive attention but to a lesser extent. This distribution suggests a strategic emphasis on practical, experiential learning and competitive engagement within the initiatives/projects.

1.3.3. STRUCTURE OF THE DELIVERABLE

The report consists of several parts:

- Executive summary;
- Intro cards of all collected projects/initiatives arranged alphabetically and divided by projects/initiatives where girls/women are the exclusive target group and other projects/initiatives in steam covering different target groups;
- the third part presents selected projects/initiatives in more detail, supported by F2F interviews with their representatives;
- and the fourth and fifth parts contain challenges and recommendations;
- Conclusions.

Each interviewed representative of a project/initiative owner signed a consent form for participation in this qualitative research, and the template of the Consent Form is provided in the Annex 1.

2. COLLECTION OF PROJECTS/INITIATIVES IN STEM/STEAM

In this section of the document, we present Introduction Cards summarising all mapped projects/initiatives by STREAM IT partners: HETFA, RAPIV, CEISE, UBB, UBU, and SV STP. Each card provides comprehensive details including:

- Project Title
- Project/Initiative Owner
- Project/Initiative Implemented By
- Aim and Main Activities
- Source of information
- Language and format of information
- Thematic focus
- Territorial scope

This section is divided into two parts:

1. Projects/Initiatives in Which Girls/Women are Exclusive Target Groups;
2. Other Projects/Initiatives in STE(A)M Covering Different Target Groups.

The STREAM IT consortium has diligently mapped various projects and initiatives across STEAM disciplines to highlight efforts that promote inclusivity and innovation. By focusing on initiatives where girls and women are the primary target groups, and other projects covering diverse demographics within STEAM, we aim to showcase the breadth and impact of these endeavours. Each introduction card serves as a comprehensive snapshot, detailing the objectives, activities, and geographical reach of each initiative. This initiative not only aims to raise awareness but also to inspire collaboration and foster a more inclusive environment within the STEAM community.

2.1. PROJECTS/INITIATIVES IN WHICH GIRLS/WOMEN ARE EXCLUSIVE TARGET GROUPS

This chapter provides an overview of the selected projects and initiatives that have been instrumental in promoting gender diversity and inclusivity within STEAM (Science, Technology, Engineering, and Mathematics) fields. The initiatives discussed here highlight various approaches and strategies aimed at inspiring young women and girls to pursue careers in science and technology, while also addressing historical gender disparities in these disciplines. Through an exploration of their origins, methodologies, and outcomes, this chapter seeks to elucidate the impact and significance of these efforts in fostering a more equitable and diverse scientific community.

AMBASSADORSHIP	
PROJECT/INITIATIVE OWNER	
NaTE - Nők a Tudományban Egyesület (Association of Women in Science)	
AIM AND MAIN ACTIVITIES	
The ambassadors are young high school and university girls who are not only interested in natural sciences but also actively engaged in promoting them. Skills development and relationship-building Programmes are organised for the ambassadors. Additionally, ambassadors can assist in promoting the profession, for example, through events like Girls' Day.	
Source of information:	https://athenaproject.net/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	Country

Association of Women in Engineering, Science, and Technology (AFIST)	
PROJECT/INITIATIVE OWNER	
Engineer (N.S.)	
AIM AND MAIN ACTIVITIES	
NGO created to promote and support women in technical areas through mentoring, educational, and cultural Activities.	
Source of information:	https://afist.ro/en/despre-noi/
Language and format of information:	English, text /website (2003 PDF report)
Thematic focus:	STEM
Territorial scope:	Country

ATHENA PROJECT (APPROACHES TO VALORISE THE HIGH ENTREPRENEURIAL POTENTIAL OF MIGRANT WOMEN)

PROJECT/INITIATIVE OWNER

The Official Chamber of Commerce, Industry, Services and Navigation of Seville (La Cámara Oficial de Comercio, Industria, Servicios y Navegación de Sevilla)

AIM AND MAIN ACTIVITIES

The ATHENA project has received a grant from the EU Asylum, Migration and Integration Fund (AMIF) to support women of migrant backgrounds across Europe to take up entrepreneurship skills, 2021-2023.

Source of information:	https://athenaproject.net/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	European Union (EU)

Be a number queen! (Legyél te is számkirálynő!)

PROJECT/INITIATIVE OWNER

Sixagon Nonprofit Kft. Egyenlítő Alapítvány (Sixagon Nonprofit Kft. Equalising Foundation)

AIM AND MAIN ACTIVITIES

The project aims to contribute to strengthening the attitudes and sense of competence of 8-10-year-old girls towards mathematics through the development of a drama pedagogy programme. During the development phase, a script for a workshop series consisting of six sessions will be prepared, to be implemented in classroom settings. 'Be a Number Queen Too!' provides a drama-pedagogical response to the social challenge that girls begin to turn away from mathematics from the age of 12 onwards, which significantly impedes their engagement in STEM (science, technology, engineering, and mathematics) careers.

Source of information:	https://www.sixagon.hu/hirek/
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	Country

Code First Girls

PROJECT/INITIATIVE OWNER
Code First Girls
AIM AND MAIN ACTIVITIES
Code First Girls is a non-profit organisation dedicated to enhancing the programming skills of women. The organisation offers a range of courses and workshops aimed at increasing women's participation in technology fields. These Programmes are typically sponsored by universities, companies, and other organisations. The goal is to create opportunities for women to excel in the technology industry and advocate for diversity in the field. Code First Girls believes that women should have equal opportunities in technology as men.

Source of information:	https://codefirstgirls.com/courses/moocs/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	Region

Codette

PROJECT/INITIATIVE OWNER
3 Romanian tech women (S.S., G.V, A.A.)
AIM AND MAIN ACTIVITIES
Created by young women in tech, it aims to develop Programmes promoting diversity and inclusion, including grants for women, inclusive workshops, hackathons, and summer schools.

Source of information:	https://codette.ro/
Language and format of information:	Romanian, text/website
Thematic focus:	STEM
Territorial scope:	Country

DigiGirlz

PROJECT/INITIATIVE OWNER

Microsoft - Microsoft Education

AIM AND MAIN ACTIVITIES

DigiGirlz provides girls and young women with opportunities to explore careers in technology and develop their skills in this field. As part of the Microsoft YouthSpark programme, it encourages youth to pursue Microsoft-related jobs. Organised by Microsoft Education, DigiGirlz offers two main Programmes: DigiGirlz Day and High-Tech Camp. DigiGirlz Day is a one-day event held at Microsoft offices worldwide. Attendees have the chance to interact with Microsoft employees, gain insights into daily work life at Microsoft, and explore career opportunities in technology. Workshops and activities throughout the day support girls with career planning, understanding tech roles, and fostering in-depth discussions about the field. DigiGirlz Day events are free for high schools and individual girls to attend.
High-Tech Camp is a multi-day event, ranging from 2 days to a week, designed to enhance girls' technological skills and exposure to cutting-edge technology. Held at diverse locations worldwide, the camp is free of charge and open to individual girls and high schools, irrespective of their level of technological knowledge. Featuring hands-on workshops, Microsoft product demonstrations, technology tours, and networking opportunities, the camp provides a comprehensive experience for participants.

Source of information:	http://www.stemalliance.eu/stem-initiatives/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	Region

Digital Belgium Skills Fund

PROJECT/INITIATIVE OWNER

Digital Leadership Institute

AIM AND MAIN ACTIVITIES

In 2017, Belgium initiated a public-sector project aimed at promoting digital skills among girls and women to foster social inclusion and mitigate radicalization.

Source of information:	https://digital-skills-jobs.europa.eu/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

Digital Girls Summer Camp (Ragazze Digiali Summer Camp)

PROJECT/INITIATIVE OWNER

EWMD (European Women Management Development)

AIM AND MAIN ACTIVITIES

The Digital Girls Summer Camp (Ragazze Digitali Summer Camp) is an initiative aimed at empowering young girls through hands-on experience in digital technology and STEM fields. Designed for teenage girls, the camp offers a variety of workshops and activities that focus on coding, digital skills, and innovative technologies. The program's goal is to bridge the gender gap in technology and inspire participants to pursue careers in STEM by providing them with practical skills and exposure to potential career paths. By fostering a supportive and engaging environment, the camp seeks to build confidence, promote collaboration, and ignite a passion for technology among young girls. It serves as an important platform for addressing gender imbalances in tech and encouraging more female participation in the digital world.

Source of information:	https://www.ragazzedigitali.it/
Language and format of information:	Italian, website
Thematic focus:	STEM
Territorial scope:	Country

Django Girls Python training

PROJECT/INITIATIVE OWNER

Django Girls - non-profit organisation

AIM AND MAIN ACTIVITIES

Empowering girls and women by providing tools, resources, and support to organise free, one-day programming workshops.

Source of information:	https://djangogirls.org/en/events/
Language and format of information:	English, website
Thematic focus:	STEM
Territorial scope:	EU

Engineer of the Year

PROJECT/INITIATIVE OWNER

Serbian Chamber of Commerce

AIM AND MAIN ACTIVITIES

In 2023, the initiative to select the "Engineer of the Year" was launched to encourage young female students to pursue studies in science, technology, engineering, and mathematics (STEM), as announced by Jelena Begović, Minister of Science, Technological Development, and Innovation. The initiative commenced in June 2023 at the Serbian Chamber of Commerce (PKS). It's goal is to promote and motivate girls, particularly in primary and secondary schools, to consider engineering sciences as a career option. The "Engineer of the Year" selection aims to identify women in these fields who can effectively inspire girls, to increase female representation in engineering. A memorandum of cooperation for a joint project related to the "Engineer of the Year" selection was signed by the Serbian Chamber of Commerce, "Siemens Serbia", and the association "Engineer of the Year". The initiative seeks to motivate youth and showcase the diverse educational paths, job opportunities, and careers available through engineering degrees. This initiative is deemed critical for Serbia's technological advancement, highlighting the significance of knowledge and technology for the country's progress.

Source of information:	https://www.inzenjerka-godine.rs/
Language and format of information:	Serbian, text
Thematic focus:	STEM
Territorial scope:	Country

Equality in Motion

PROJECT/INITIATIVE OWNER

BraveBots

AIM AND MAIN ACTIVITIES

Conference and networking event designed to bridge the gap between STEAM professionals and students.

Source of information:	https://www.youtube.com/Equality in Motion - Women in STEAM
Language and format of information:	Romanian, video
Thematic focus:	STEAM
Territorial scope:	Country

European Girls' Olympiad in Informatics

PROJECT/INITIATIVE OWNER

Each year held by a different representative.

AIM AND MAIN ACTIVITIES

The European Girls' Olympiad in Informatics (EGOI) is a prestigious annual competition designed to promote and encourage young female talent in the field of computer science and programming. The event brings together top female students from across Europe to solve challenging problems that test their skills in algorithmic thinking, problem-solving, and coding. EGOI aims to address the gender imbalance in STEM fields by providing a platform where young women can showcase their abilities, engage with peers who share their interests, and gain recognition for their achievements in informatics. The competition also serves as an inspiring and supportive environment, fostering a sense of community and encouraging more girls to pursue careers in technology and computer science.

Source of information:	https://egoi.org/
Language and format of information:	English, website
Thematic focus:	STEM
Territorial scope:	EU

European Girls' Mathematical Olympiad

PROJECT/INITIATIVE OWNER

Each year held by a different representative.

AIM AND MAIN ACTIVITIES

The European Girls' Mathematical Olympiad (EGMO) is an annual mathematics competition specifically for female students across Europe. The event aims to encourage young women to pursue further studies and careers in mathematics by providing a challenging and supportive platform to showcase their problem-solving skills. Participants are selected based on their performance in national mathematics competitions and compete in individual and team-based problem-solving tasks that cover a wide range of mathematical disciplines. EGMO not only highlights the talents of young female mathematicians but also promotes greater gender diversity in the field of mathematics by inspiring and nurturing future generations of women mathematicians. The competition fosters a sense of camaraderie and intellectual curiosity among its participants, contributing to a broader movement to address gender imbalances in STEM fields.

Source of information:	https://www.egmo.org/
Language and format of information:	English, website
Thematic focus:	STEM
Territorial scope:	Global

FeSTEM

PROJECT/INITIATIVE OWNER

Cyprus University of Technology (CUT)

AIM AND MAIN ACTIVITIES

Promote an innovative method and pedagogy that enables higher education students to utilise both traditional and computationally-rich media to create meaningful, shareable exhibits. These exhibits will serve as mentoring models aimed at encouraging girls and women to sustain their engagement in STEM.

Source of information:	https://festemproject.eu/
Language and format of information:	English, website
Thematic focus:	STEM
Territorial scope:	EU

FemSTEM

PROJECT/INITIATIVE OWNER

Inova Consultancy

AIM AND MAIN ACTIVITIES

Bridging the gender gap in soft skills within STEM by equipping women with tools and techniques to enhance their confidence and soft skills. This is achieved through a blend of online training and peer-support Coaching Circles™, structured around the RRP framework (Recruitment, Retention And Progression framework).

Source of information:	https://femstem.eu/
Language and format of information:	English, website
Thematic focus:	STEM
Territorial scope:	EU

FUTURE WOMEN (Erasmus+ 2022-1-BG01-KA220-HED-000087080)

PROJECT/INITIATIVE OWNER

University of Chemical Technology and Metallurgy – BULGARIA and consortium

AIM AND MAIN ACTIVITIES

In FUTURE WOMEN aim is to promote digital and entrepreneurial competencies among women relevant to STEM jobs using innovative digital teaching and learning materials and tools. Our products are designed to address digital transformation by fostering digital readiness, resilience, and capacity. Results:

1. FUTURE WOMEN e-profile & MOOC that includes the benchmarking of career trends and identification of women role models in digital careers.
2. FUTURE WOMEN CPD programme for career counsellors, equipping them with new methods and techniques to better support female students.
3. FUTURE WOMEN learning lab and an online forum to encourage the training of career counsellors and exchange of good practices in new and innovative methods and tools on digital economy and STEM demand trends.

Source of information:	https://future-women.eu/bg/
Language and format of information:	English, Bulgarian, website
Thematic focus:	STEM
Territorial scope:	EU

Girl Up Neuroscience (GUN)	
PROJECT/INITIATIVE OWNER	
Girl Up	
AIM AND MAIN ACTIVITIES	
Support gender equality in neuroscience in Romania through events and content.	
Source of information:	https://www.instagram.com/girlup.neuroscience/
Language and format of information:	English, text & photo
Thematic focus:	STEM
Territorial scope:	Country

Girls can scan	
PROJECT/INITIATIVE OWNER	
Girls can scan	
AIM AND MAIN ACTIVITIES	
Networking group for women studying architecture.	
Source of information:	https://www.instagram.com/girlscanscan/
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	Region

Girls Day

PROJECT/INITIATIVE OWNER

WHTO - Expertisecentrum voor haar technische ontwikkeling, AP Den Haag (Center of expertise for its technical Development, AP The Hague)

AIM AND MAIN ACTIVITIES

Organised for more than 10 years, the event aims to raise girls' awareness of science, information technology, and other technologies, introduce careers and companies in these fields, stimulate girls' interest in science and technology, and provide them with opportunities to showcase their talents. On Girls' Day, science, technology, and ICT companies, as well as technology departments of various companies, open their doors to girls aged 10 to 15 years old for a range of activities and opportunities to meet women working in these sectors. Traditionally held in person, the event has transitioned to a virtual format due to the COVID-19 pandemic. Girls' Day is also organised in other countries.

Source of information:	https://www.vhto.nl/activiteiten/girlsday/over-girlsday
Language and format of information:	Dutch, website
Thematic focus:	STEAM
Territorial scope:	Country

Girls' Day Festival (Lányok napja fesztivál)

PROJECT/INITIATIVE OWNER

NaTE

AIM AND MAIN ACTIVITIES

The aim of the initiative is to provide primary and high school students, who are on the brink of choosing a career path, with hands-on experience in the workplaces of the future. During the event, a variety of STEM professions (natural sciences, technology, engineering, and mathematics) and their future opportunities are showcased to young participants. They learn about the daily routines of professionals such as software testers, traffic engineers, and researchers. Numerous large companies, universities, and research institutes across the country open their doors to give students insights into the practical applications of engineering and natural sciences.

Source of information:	https://nokatud.hu/lanyok-napja/
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	Country

Girls go circular

PROJECT/INITIATIVE OWNER

EIT (European Institute of Innovation & Technology) RawMaterials GmbH

AIM AND MAIN ACTIVITIES

The "Girls Go Circular" initiative aims to support schoolgirls and students in developing their digital and leadership skills, while educating them about the circular economy and encouraging solutions for a sustainable future. Using a learning-by-doing approach, the project engages participants in various activities such as online research, entrepreneurial role-plays, and challenge-based exercises. Aligned with the EU Digital Competences Framework, the European Entrepreneurship Competence Framework, and the European Sustainability Competence Framework, the project's online learning platform, the "Circular Learning Space", offers students opportunities to:

- Acquire knowledge about the circular economy;
- Gain insights into businesses' adoption of circular economy practices;
- Enhance their digital and entrepreneurial skills;
- Develop solutions to societal and environmental challenges.

The initiative addresses diverse societal challenges through modules focusing on topics such as the circular economy of smartphones and electronic devices, urban food systems, e-waste, fashion, metals, plastics, robotics, climate change, sustainable mobility, healthcare, artificial intelligence, climate resilience, and more.

By providing comprehensive resources and interactive learning experiences, the Girls Go Circular initiative empowers young girls and students to become agents of change in promoting sustainability and circularity within their communities and globally.

Source of information:	https://eit-girlsgocircular.eu/about/#close
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

Girls4STEM

PROJECT/INITIATIVE OWNER

Higher Technical School of Engineering (ETSE) - University of Valencia (Escola Tècnica Superior d'Enginyeria (ETSE) - Universitat de València)

AIM AND MAIN ACTIVITIES

Girls4STEM is a project aimed at promoting STEM careers, particularly among girls, through the organisation of outreach activities. The spirit of the project is participatory and inclusive; therefore, its primary audience includes pre-university students: from primary, secondary, high school, and vocational training cycles.
The project aims to showcase the daily lives of professionals working in STEM fields. To achieve this, it incorporates a second key component: STEM experts who, through dynamic and engaging talks, will update students and the public on emerging talent both within and outside the Valencian Community. They will also highlight the role of women in STEM disciplines.

Source of information:	https://girls4stem.uv.es/
Language and format of information:	Spanish, the Activities to be carried out include the preparation by the students of biographies in video format of our STEM experts and their dissemination through this same website and on Wikipedia. Activities included in two types of conference cycles: the Family Talks (public in general) and the Professional Talks (teachers).
Thematic focus:	STEM
Territorial scope:	City/Province

Hypatia (GERI-1-2014 - Innovative approach to communication encouraging girls to study science)

PROJECT/INITIATIVE OWNER

Nemo Science Museum Foundation, Amsterdam

AIM AND MAIN ACTIVITIES

Hypatia aims to bring lasting change to the way schools, science museums, research institutions, and industry engage teenage girls in STEM across Europe. By bringing together these stakeholders with gender experts and teenagers themselves, Hypatia will develop, pilot, and disseminate a unique modular toolkit of activities and guidelines for engaging teenagers in STEM in a gender-inclusive manner. These innovative activities, based on existing good practices from across Europe, will be implemented in 14 EU countries and beyond, in schools, science museums, and various institutions in research and industry, leveraging strengthened hubs of stakeholders created through the project. The activities will focus on inclusive communication of STEM, empowering teenage girls, and exploring the diverse skills necessary for the wide array of STEM studies and careers available to young people. The Hypatia hubs will provide a sustainable foundation for these activities to continue long-term, emphasising dissemination through networks and stakeholder engagement to amplify the project's impact.

Source of information:	https://cordis.europa.eu/project
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

I want to be a UPCT Engineer

PROJECT/INITIATIVE OWNER

UPC (Universidad Politécnica de Cartagena - Polytechnic University of Cartagena)

AIM AND MAIN ACTIVITIES

This initiative aims to inspire STEM vocations among young women and provide them with female role models in the fields of science and technology. Participants will spend a day with a leading researcher to learn about her professional work, workspace, and field of study.

Source of information:	https://www.upct.es/voluntariado-apoyo-discapacidad/
Language and format of information:	Spanish, mentoring, talks
Thematic focus:	STEM
Territorial scope:	City/Province

Initiatives to promote women in ICT, entrepreneurship and science

PROJECT/INITIATIVE OWNER

Bulgarian Centre for Women in Technology (BCWT)

AIM AND MAIN ACTIVITIES

The idea behind the initiative is to contribute to a much-needed change of mindset and improve national environment to encourage women choose ICT and develop a career in the sector.

Source of information:	https://eige.europa.eu/gender-mainstreaming/
Language and format of information:	English, Bulgarian, website
Thematic focus:	STEM
Territorial scope:	Country

Inspiring Girls* Expedition

PROJECT/INITIATIVE OWNER

Inspiring Girls* Expedition

AIM AND MAIN ACTIVITIES

Each summer, they lead tuition-free, multi-day expeditions for high school girls that integrate science, art, and outdoor activities. These expeditions are guided by professional female scientists, artists, and wildlife guides. During each expedition, the team conducts scientific and artistic research on the surrounding environment. In small groups, participants design and execute science projects, which are presented to the public on the final day of their expeditions.

Source of information:	https://www.inspiringgirls.org
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	Region

Interviews with female inventors from the UPM

PROJECT/INITIATIVE OWNER

Polytechnic University of Madrid

AIM AND MAIN ACTIVITIES

Within the current UPM patent portfolio, approximately 20% of the inventors are women. At UCC+i, we aim to highlight these inventors through a series of interviews. With this initiative, we pursue three objectives: to disseminate UPM research results, to showcase UPM's significant activities in the field of industrial property, and to underscore that all of this is achieved thanks to the work of researcher-inventors whose professional profiles can serve as role models for young women. This effort also aims to help narrow the gender gap that persists in some of these areas.

Source of information:	https://www.upm.es/Investigacion/innovacion
Language and format of information:	Spanish, Interview video
Thematic focus:	STEM
Territorial scope:	Country

Living Library (Élő Könyvtár)

PROJECT/INITIATIVE OWNER

BME Faculty of Economics and Social Sciences

AIM AND MAIN ACTIVITIES

On "Library Day," March 8th, female students have the chance to interact with accomplished female engineers who graduated from BME, discussing their experiences in technical fields, career development, and balancing family life. Students received information from “living book” cards—short introductions—and chose a conversation partner. Detailed information on the cards confirmed that these women were indeed working in technical fields. The 15 invited speakers, each successful in their profession with professional experience ranging from 3 to 27 years, shared insights into their personal lives—whether single, divorced, or married—and even introduced their pets, ranging from dogs to bunnies. During the event, 22 interested high school students had the opportunity to engage more deeply with four “living books” each.

Source of information:	https://www.gtk.bme.hu/blog/betekintes-a-mernoknok-mindennapjaiba-gtk-s-elo-konyvtar/
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	City/ Province

L'Oréal-UNESCO For Women in Science

PROJECT/INITIATIVE OWNER

L'Oreal Romania

AIM AND MAIN ACTIVITIES

Research competition designed to support women (PhD candidates or post-docs) in STEM.

Source of information:	https://www.forwomeninscience.com/challenge/
Language and format of information:	English, text/website
Thematic focus:	STEM
Territorial scope:	Country

MakerGirls	
PROJECT/INITIATIVE OWNER	
The Science and Technology Station University of Burgos (La Estación de la Ciencia y la Tecnología Universidad de Burgos)	
AIM AND MAIN ACTIVITIES	
The Maker Girls programme aims to cultivate interest in scientific and technological careers among girls, while also promoting self-confidence and teamwork through female solidarity. The programme seeks to encourage girls' interest and confidence in technology by equipping them with the tools to explore their creativity and develop technical skills.	
Source of information:	https://laestacioncyt.es/formacion/cursos
Language and format of information:	Spanish, annual programme
Thematic focus:	STEAM
Territorial scope:	City/Province

More Girls in STEAM (MOGIS)

PROJECT/INITIATIVE OWNER

AFA association (Association All For All)

AIM AND MAIN ACTIVITIES

The "More Girls in STEAM" (MOGIS) initiative, led by the AFA organisation in collaboration with partners, aims to encourage and empower girls to pursue careers and education in STEM fields (science, technology, engineering, arts, and mathematics). Recognising the importance of gender diversity in these areas, MOGIS focuses on increasing the participation of girls and young women in STEM-related activities, workshops, and events.

Through MOGIS, participants have the opportunity to attend workshops, hackathons, and seminars designed to introduce them to various aspects of STEM fields, including STEM education's significance, potential career opportunities, and technology's societal impact. The initiative also offers mentorship opportunities, enabling girls to connect with female experts and professionals in STEM industries who serve as role models and guides.

Furthermore, MOGIS aims to address the gender gap in STEM education and careers by promoting awareness and advocating for gender equality in STEM fields. By highlighting women's achievements and contributions in STEM and showcasing success stories, MOGIS aims to inspire and empower girls to pursue their interests and ambitions in these areas.

Overall, the MOGIS initiative plays a crucial role in fostering a supportive and inclusive environment for girls and young women interested in STEM, thereby contributing to greater diversity and innovation in STEM fields.

Source of information:	https://www.afa.co.rs/vesti/categories/
Language and format of information:	Serbian, text
Thematic focus:	STEM
Territorial scope:	Country

Move it Forward+

PROJECT/INITIATIVE OWNER
Digital Leadership Institute
AIM AND MAIN ACTIVITIES
European ERASMUS+ project to deploy a pan-European platform, toolkit and series of digital startup skills events that support women-led entrepreneurship across Europe, 2020-2022.

Source of information:	https://moveitforwardplus.com/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

Pink Cloud (Nuvola Rosa)

PROJECT/INITIATIVE OWNER
Microsoft Italy
AIM AND MAIN ACTIVITIES
The initiative focuses on organising training sessions and raising awareness through various events, complemented by a comprehensive communication campaign. These efforts aim to empower women in the tech industry by providing them with the necessary skills and knowledge to succeed. The training sessions are designed to enhance both technical and soft skills, ensuring participants are well-equipped for the demands of the tech field. Additionally, awareness events will highlight the importance of gender diversity in technology and inspire more women to pursue careers in this sector. The communication campaign will further amplify these messages, reaching a broader audience and fostering a supportive community for women in tech. Through these combined efforts, the initiative strives to create a more inclusive and equitable tech industry.

Source of information:	https://news.microsoft.com/it-it/
Language and format of information:	Italian. Events take place in Lombardy and in the Rome Region
Thematic focus:	STEM
Territorial scope:	Region

Research & Innovation Peers Project

PROJECT/INITIATIVE OWNER

Digital Leadership Institute

AIM AND MAIN ACTIVITIES

Research & Innovation Peers Project European Commission HORIZON2020 project implementing Gender Equality Plans in European research institutes, for the European Commission, 2017-2023.

Source of information:	http://ri-peers.eu/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

STEAM Summer School for Girls

PROJECT/INITIATIVE OWNER

Knowledge-Economy Forum

AIM AND MAIN ACTIVITIES

The camp is designed to provide female students in 8th to 10th grade with the opportunity to explore the diverse STEAM community and hands-on experiments. The girls engage in inspiring interactions with scientists and researchers, using creative methods to envision their potential future career paths.

Source of information:	https://www.zef.lt/naujienos/kvieciame-8-10-klasiu-moksleives-i-steam-stovykla/
Language and format of information:	Lithuanian, press release
Thematic focus:	STEM
Territorial scope:	Country

Shadowing programme

PROJECT/INITIATIVE OWNER

NaTE

AIM AND MAIN ACTIVITIES

Shadowing Programme supports high school and university girls in career decision-making. Within the programme, participants spend a full day at a host company or research institute, shadowing a female employee throughout the day. This experience allows them to establish personal connections with accomplished women who hold leadership positions, providing insights into company operations and daily activities. It also offers opportunities for informal conversations and learning about future-oriented professions.

Source of information:	https://nokatud.hu/shadowing-program/
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	Country

SHE CHOOSES STEM for the future (Erasmus+ 2022-1-IT02-KA220-SCH-000086855)

PROJECT/INITIATIVE OWNER

Municipality of Narni, Umbria, Italy

AIM AND MAIN ACTIVITIES

The goal is to encourage young women to pursue studies in science, technology, engineering, and mathematics (STEM) to narrow the gender gap in tomorrow's world. The initiative aims to achieve the following results:

- Guidelines: A practical handbook for teachers, educators, and parents on how to encourage girls to choose STEM subjects and break down gender barriers.
- Digital Toolkits: Interactive and engaging resources designed to educate and inspire female students about opportunities in STEM.
- Video Storytelling: Videos showcasing how partners have worked and continue to work to inspire the next generation.
- Four National Workshops in Schools: Scheduled for 2024, these workshops aim to engage students, followed by a closing event in Brussels in September.

Source of information:	https://www.stemforthefuture.eu/project-result/
Language and format of information:	English, Bulgarian, website
Thematic focus:	STEM
Territorial scope:	EU

She's Skool

PROJECT/INITIATIVE OWNER

Skool, organisation that provides technology education for girls in Hungary

AIM AND MAIN ACTIVITIES

Success and experience-based programming courses for young girls. The instructors work at tech companies and show how IT companies work.

Source of information:	https://skool.org.hu/shes-skool/
Language and format of information:	Hungarian, text
Thematic focus:	STEM
Territorial scope:	City/Province

SMARTIZ

PROJECT/INITIATIVE OWNER

NaTE

AIM AND MAIN ACTIVITIES

The SMARTIZ programme aims to promote mathematics and IT learning among girls with genuine interest. Teachers use innovative teaching tools, experts in improvisation and drama pedagogy, and experienced staff from Morgan Stanley not only impart professional knowledge but also aim to help high school girls interested in mathematics develop self-confidence, awareness, and greater self-assurance. Lecturers present the material with interactive learning materials based on experiences and projects, gradually showing students how mathematics and IT can be applied in everyday life.
The programme employs a strategy of skill development integrated into its content. This approach prioritises identifying content elements and their various contexts to foster students' capability, motivation, and confidence in applying acquired knowledge. The course materials aim not only to impart knowledge but also to facilitate comprehensive development, enhancing both mathematical competence and essential skills crucial for students' future learning and success in their chosen fields.
The pedagogical objective is to collaborate with participants to advance their complex personal attitudes, motivation, and skills related to their abilities, prior knowledge, explicit and tacit knowledge, and their aspirations in mathematics and IT careers and learning.

Source of information:	https://nokatud.hu/smartiz/
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	Country

STEAMbrace (European coordination network and Activities to embrace a sustainable and inclusive STEAM educational system: the blend of artistic and creative approaches in STEM education, research & innovation)

PROJECT/INITIATIVE OWNER
European Commission (EC)
AIM AND MAIN ACTIVITIES
This project aims to address the existing gender gap in STEM fields by harnessing the potential of STEAM (STEM + Arts) education approaches for future European innovators, with a particular focus on women. The project will establish a coordinated alliance at the European level and implement various networking and educational activities grounded in creative thinking and evidence-based scientific approaches.

Source of information:	https://ec.europa.eu/info/funding-tenders/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

STEM Talent Girls

PROJECT/INITIATIVE OWNER
ASTI Foundation (Fundación ASTI)
AIM AND MAIN ACTIVITIES
This is an innovative, high-impact educational project aimed at promoting scientific and technological vocations among young women. Participants will learn about future professions in high demand in the job market and their importance to society. They will explore STEM areas in an innovative and enjoyable manner, gaining first hand exposure to the latest advancements in science, technology, engineering, mathematics, and entrepreneurship guided by top-level female professionals.

Source of information:	https://talent-girl.com/
Language and format of information:	Spanish, mentoring, talks
Thematic focus:	STEM
Territorial scope:	Country

STEM4Girls UC3M

PROJECT/INITIATIVE OWNER

Carlos III University Madrid (Universidad Carlos III Madrid)

AIM AND MAIN ACTIVITIES

One of the main objectives of STEM4Girls UC3M is to create role models for high school students to draw inspiration from when making decisions, without gender bias. The programme allows girls and young people to learn about the excellent work currently being carried out by the university's researchers and makes visible the decisive contributions to science made by women scientists throughout history.

Source of information:	https://www.uc3m.es/secundaria/en/stem-girls-uc3m
Language and format of information:	Spanish, Mentoring, Workshops
Thematic focus:	STEAM
Territorial scope:	City/Province

STEMpont

PROJECT/INITIATIVE OWNER

ELTE – Faculty STEMpont of Informatics (Eötvös Loránd Tudományegyetem, Informatikai Kar - Eötvös Loránd University, Faculty of Informatics)

AIM AND MAIN ACTIVITIES

The purpose of the initiative is to implement a comprehensive career guidance and talent development programme, primarily targeting girls. The goal is to increase the number of students pursuing advanced studies in technical, natural sciences, mathematics, and IT fields.

Source of information:	https://www.inf.elte.hu/content/
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	Country

STEMsisters	
PROJECT/INITIATIVE OWNER	
Skool - the organisation that provides technology education for girls in Hungary	
AIM AND MAIN ACTIVITIES	
In addition to teaching programming, they help girls choose the right university and workplace with a scholarship programme (mentoring) and offline discussions.	
Source of information:	https://www.stemsisters.hu
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	Country

Technovation Girls Romania	
PROJECT/INITIATIVE OWNER	
Adfaber (Asotiatia Adfaber- Adfaber Association)	
AIM AND MAIN ACTIVITIES	
Offering girls aged 8 to 18 the skills needed to become entrepreneurs and leaders in technology. Through volunteering mentors, professors, and parents, and utilising tools provided by the initiative, girls learn to develop mobile apps addressing real-world problems and create business plans.	
Source of information:	https://adfaber.org/en/
Language and format of information:	English, text ant photos
Thematic focus:	STEM
Territorial scope:	Country

The International Girl's Day in ICT

PROJECT/INITIATIVE OWNER

Association of Business Women of Serbia (ABW Serbia)

AIM AND MAIN ACTIVITIES

The Association of Business Women of Serbia (ABW Serbia) has been celebrating International Girls' Day in ICT for fourteen consecutive years, aiming to empower girls in choosing future professions based on their personal interests and talents, rather than succumbing to stereotypes. Over the past years, ABW Serbia has engaged more than 10,000 final-year elementary school girls in various activities, including visits to ICT companies and companies owned by women, as well as a competition called "Catch the Idea" for the best video work.

Source of information:	https://poslovnezene.org.rs/en/2022/12/05/international-girls-in-ict-day/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	Country

The SEER - The STE(A)M Education European (HORIZON-WIDERA-2021-ERA-01-70: Developing a STE(A)M roadmap for Science Education in Horizon Europe)

PROJECT/INITIATIVE OWNER

EUN Partnership AISBL (European Schoolnet), Belgium

AIM AND MAIN ACTIVITIES

The EU-funded SEER project aims to develop roadmaps facilitating policy and institutional changes necessary for the widespread adoption and integration of STE(A)M education across Europe. The project will achieve this overarching goal by synthesising the current status of STE(A)M education, evaluating national and international policies and initiatives, and analysing the needs of teachers and schools. This analysis will identify gaps in policy and resources, informing the design of milestones and strategies for key stakeholders such as policymakers, school administrators, teachers, and industry. These efforts aim to support the implementation of STE(A)M education not only in Europe but also globally.

Source of information:	https://cordis.europa.eu/project/id/101058569
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

WE4Change

PROJECT/INITIATIVE OWNER
Digital Leadership Institute
AIM AND MAIN ACTIVITIES
The WE4Change project ("Girls and Women connecting for environmental change") has received Erasmus+ funding to increase entrepreneurship in STEM fields by girls and women through climate change activism, 2021-2023.

Source of information:	http://we4change.eu/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

White Paper as part of moves to encourage more women into angel investing

PROJECT/INITIATIVE OWNER
European Business Angels Network (EBAN)
AIM AND MAIN ACTIVITIES
According to EBAN, the White Paper initiative serves as a call to action for all stakeholders involved in fostering a vibrant entrepreneurship ecosystem, with a particular emphasis on policymakers. It proposes measures aimed at increasing the involvement of women in the business angel market. One of EBAN's primary activities involves conducting research on early-stage and business angel markets across various fields of expertise, including the STE(A)M field.

Source of information:	https://sciencebusiness.net/news/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

Women go Tech

PROJECT/INITIATIVE OWNER
Women go Tech
AIM AND MAIN ACTIVITIES
The WomenGoTech initiative aims to support and encourage women's participation in the technology industry. The programme offers various initiatives, such as mentorship Programmes and training, to assist women in building their careers in technology. WomenGoTech aims to create a diverse community and connect female professionals within the industry. The initiative also seeks to increase women's participation and promote gender equality in the tech world. WomenGoTech encourages women to take an active role in technological development and innovation.

Source of information:	https://www.womengotech.com
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	Country

Women in Data Science Romania

PROJECT/INITIATIVE OWNER
Women in Data Science (WiDS) Ambassador
AIM AND MAIN ACTIVITIES
The Romanian event features more than 40 women data scientists from all sectors: industry, government, academia and civil society., and our sessions are centered around topics such as Public Policies based on data science, e-Health, implementation of Ethics in AI, current EU trends (prevention – the use of a bias AI), How Data Science will Impact The Labour Market and Education, OLAP, The importance of Data Privacy related to the usage of AI and big data analytics, how to become a data scientist – advice from practitioners, the science behind data analysis, and much more!

Source of information:	https://360.org.ro/women-in-data-science-romania/
Language and format of information:	Romanian, video
Thematic focus:	STEM
Territorial scope:	EU

Women in Science

PROJECT/INITIATIVE OWNER

University of Navarra (Universidad de Navarra)

AIM AND MAIN ACTIVITIES

One of the barriers preventing more girls from pursuing scientific careers is the lack of female role models in these fields. To address this challenge, the University of Navarra Science Museum introduces the "Women in Science" project: an animated series that tells the biographies of significant female scientists through short, informative videos. These videos aim to shed light on female scientists who have made notable contributions in their respective fields but remain relatively unknown to the general public.
Additionally, the project offers educational material in the form of a book, designed as an informative tool for schools. Each chapter of the book includes various activities related to the featured scientists, providing interactive learning experiences for students

Source of information:	https://museodeciencias.unav.edu/actividades/la-mujer-en-la-ciencia
Language and format of information:	Spanish, Videos and book
Thematic focus:	STEM
Territorial scope:	Country

Women in Science (Donne nella Scienza)

PROJECT/INITIATIVE OWNER

Ministry of Education and Research

AIM AND MAIN ACTIVITIES

The aims of the project are:
Encourage girls to participate in study and research activities, thereby promoting gender mainstreaming processes in science and technology.
Challenge stereotypes that portray girls as unsuitable for science.
Counter the prejudice that science is devoid of emotions and therefore distant from, or even opposed to, humanistic knowledge.
Empower girls by providing access to decision-making roles, fostering greater self-confidence among women in pursuing careers previously perceived as male-dominated.
Enhance scientific endeavours by incorporating the female perspective, offering new creative impulses through participation in goal-setting and proposing innovative research directions.
Highlight women who are shaping the future through their work and serve as role models for new generations.

Source of information:	https://www.donnenellascienza.it/
Language and format of information:	Italian. Resources are organised along 6 disciplines: anatomy and medicine; astrophysics; chemistry and physics; philosophy; and technology. It also targets teachers, counsellors, Science and Technology Museums.
Thematic focus:	STEAM
Territorial scope:	Country

Women in STEM – Overcoming Stereotypes (2021-1-BG01-KA220-HED-000023004)

PROJECT/INITIATIVE OWNER

University of Trakia, Stara Zagora, Bulgaria

AIM AND MAIN ACTIVITIES

The following project aims to explore effective strategies for promoting and increasing women's participation in higher education and STEM professions. It seeks to motivate women to engage in these fields of knowledge, eliminate gender-based stereotypes and prejudices regarding their performance and abilities, and address doubts about their potential for success. The project will also present future career development opportunities aimed at creating a more supportive, tolerant, and diverse STEM educational environment for women. It intends to benefit not only women currently pursuing STEM education and careers but also those who may feel hesitant or discouraged due to persistent underestimation of their abilities. Additionally, the project aims to provide valuable insights for expert psychologists, trainers, youth workers, career counsellors, and others interested in fostering greater female participation in STEM.

Source of information:	http://www.uni-sz.bg/
Language and format of information:	English, website
Thematic focus:	STEM
Territorial scope:	EU

Women in STEM Scholarship

PROJECT/INITIATIVE OWNER

Zonta International

AIM AND MAIN ACTIVITIES

Embracing the mission "to build a better world for women and girls".

Source of information:	https://www.zontabulgaria.com
Language and format of information:	English, Bulgarian, website
Thematic focus:	STEM
Territorial scope:	EU

Women in Tech	
PROJECT/INITIATIVE OWNER	
AmCham Serbia	
AIM AND MAIN ACTIVITIES	
"Women in Tech" is a mentoring programme facilitated by AmCham Serbia, designed to empower and train women and girls in the ICT field. The programme focuses on skill development, professional networking, and mentorship to support participants as they embark on their careers. A special speed dating kick-off event is organised to pair mentors and mentees effectively.	
Source of information:	https://amcham.rs/women-in-tech/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	Country

Women in Tech Cluj	
PROJECT/INITIATIVE OWNER	
4 Romanian female engineers (O.S., M.M., G.L.-F., I.C.)	
AIM AND MAIN ACTIVITIES	
Recurrent meetups with women in the tech industry, to build a community of women who share, support, and grow together.	
Source of information:	https://www.womenintechcluj.com/
Language and format of information:	English, text/website
Thematic focus:	STEM
Territorial scope:	Region

Women Power Code

PROJECT/INITIATIVE OWNER

Civic Computing

AIM AND MAIN ACTIVITIES

European Commission ERASMUS project promoting best practices to increase uptake of digital skills among women across Europe, 2016-2019. The Women Power Code project, supported by the European Commission, aims to empower women through the acquisition of digital skills. By offering comprehensive training and resources, the project seeks to bridge the gender gap in technology fields.

Source of information:	https://womenpowercode.eu/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

Women TechEU

PROJECT/INITIATIVE OWNER

European Innovation Council and SMEs Executive Agency (EISMEA)

AIM AND MAIN ACTIVITIES

The Women TechEU pilot scheme was launched on July 13, 2021, as a new EU initiative aimed at supporting deep-tech startups led by women and nurturing them into future leaders in the deep-tech sector. Through the pilot call, 50 promising deep-tech startups from EU Member States and Associated Countries were receiving targeted funding along with first-class coaching and mentoring.
Following the success of the pilot phase, the Commission launched a second WomenTechEU call in 2022, significantly increasing the budget to 10 million euros. This expanded initiative supported an additional 134 deep-tech companies founded by women, providing them with financial backing and valuable mentoring services.

Source of information:	https://eismea.ec.europa.eu/programmes
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

Women2Invest programme	
PROJECT/INITIATIVE OWNER	
EIT	
AIM AND MAIN ACTIVITIES	
It seeks to help women with backgrounds in science, technology, engineering, arts and mathematics (STEAM) to start careers in venture investment.	
Source of information:	https://eit.europa.eu/our-Activities/
Language and format of information:	English, Bulgarian, website
Thematic focus:	STEAM
Territorial scope:	EU

2.2. OTHER PROJECTS/INITIATIVES IN STEAM COVERING DIFFERENT TARGET GROUPS

This section focuses on a diverse array of projects and initiatives within the STE(A)M domain, which cater to a variety of target groups beyond exclusively girls and women. These initiatives exemplify the inclusive spirit of STEAM by engaging with different demographics, including underrepresented groups, minorities, and broader community stakeholders. Each project featured here demonstrates unique approaches and objectives aimed at fostering innovation, education, and empowerment across various Thematic focuses and Territorial scopes. Through this exploration, we aim to highlight the diversity of perspectives and contributions within the STEAM field, showcasing initiatives that contribute to a more inclusive and equitable future.

Academy of Robotics	
PROJECT/INITIATIVE OWNER	
Robotikos akademija, Lithuania (Academy of Robotics)	
AIM AND MAIN ACTIVITIES	
The academy organises courses, after school activities and summer camps related to robotics. One of the several summer camps is offered exclusively for girls.	
Source of information:	https://robotikosakademija.lt
Language and format of information:	Lithuanian, online info
Thematic focus:	STEM
Territorial scope:	Country

AGRIGEP - Assessment and implementation of Agriculture and Life Science Universities' first Gender Equality Plans in widening countries (HORIZON-WIDERA-2022-ERA-01)

PROJECT/INITIATIVE OWNER

Hungarian University of Agriculture and Life Sciences (MATE) (Magyar Agrár- és Élettudományi Egyetem)

AIM AND MAIN ACTIVITIES

The AGRIGEP project, with the joint efforts of six consortium partners, aims to perform a responsible assessment of widening RPOs' current status on Gender Equality Plans implementation, improve capabilities through intensive capacity building, and develop and implement an agriculture and life science-targeted GEP with sector-specific measures and strategies. These results could lead to long-term institutional reforms. Additionally, this project works to establish the inclusion of GE issues within the RPOs' educational system and the professional training of students. The realisation of these objectives and the implementation of inclusive GEPs will enhance the inclusiveness, reputation, attractiveness, and research excellence of widening country RPOs. Moreover, it will promote the transformation of institutions and advance GE within the ERA.

Source of information:	https://agrigep.eu
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

BioSa

PROJECT/INITIATIVE OWNER
community of enthusiasts
AIM AND MAIN ACTIVITIES
The Commonwealth of Biologists is a non-commercial project based on the collaboration of a team of curious and motivated students, along with a dedicated team that curates the project. It provides distance learning in biology that goes beyond the national matriculation exam syllabus, preparing students for the Lithuanian Pupils' Biology Olympiad and the International Biology Olympiad. BioSa is curated by student volunteers, many of whom are former BioSa members, participants, and prize-winners in the Olympiads.

Source of information:	https://olimpiados.lt/straipsniai/prasideda-13-asis-biologu-sandraugos-sezonas
Language and format of information:	Lithuanian, info
Thematic focus:	STEM
Territorial scope:	Country

Code Academy Kids

PROJECT/INITIATIVE OWNER
CodeAcademy Kids, Lithuania
AIM AND MAIN ACTIVITIES
The company organising coding for young children - afterschool activities, online training, and summer camps.

Source of information:	https://www.codeacademykids.com
Language and format of information:	Lithuanian, online info
Thematic focus:	STEM
Territorial scope:	Country

Code Week

PROJECT/INITIATIVE OWNER
Code Week
AIM AND MAIN ACTIVITIES
EU Code Week is a grassroots movement that celebrates creativity, problem-solving, and collaboration through programming and other tech activities. The idea is to make programming more visible and show people of all ages — young, adults, and elderly — how to bring ideas to life with code. The goal is to demystify these skills and bring motivated individuals together to learn and innovate collectively

Source of information:	https://codeweek.eu/about
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	Region

Coding for Young People

PROJECT/INITIATIVE OWNER
PRISM Association
AIM AND MAIN ACTIVITIES
European Commission ERASMUS project promoting best practices to increase uptake of digital skills among young people across Europe, aims to empower young people through the acquisition of digital skills. By offering comprehensive training and resources, the project seeks to bridge the gender gap in technology fields, 2015-2017.

Source of information:	https://www.associazioneprism.eu/coding-for-young-people/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

Coding4Girls (2018-1-SI01-KA201-047013, Erasmus+)

PROJECT/INITIATIVE OWNER

University of Ljubljana

AIM AND MAIN ACTIVITIES

General goal: Overcome the gender gap in computer science education and careers by introducing more engaging learning methods for young people.
Main objective: Introduce an innovative methodological learning framework to develop programming skills through instructional support content and end-to-end learning activities. This framework integrates design thinking methodologies and the serious game approach.

Source of information:	https://www.coding4girls.eu/
Language and format of information:	English, Bulgarian, Slovenian, Croatian, Greek, Italian, Portuguese, Turkish, website
Thematic focus:	STEM
Territorial scope:	EU

Creative Serbia (Serbia creates) platform

PROJECT/INITIATIVE OWNER

Government of Republic of Serbia, Serbia

AIM AND MAIN ACTIVITIES

Creates is a dynamic platform dedicated to supporting Serbia's creative industries by providing resources, tools, and networking opportunities for professionals and entrepreneurs in the field. It offers access to funding, education, and mentorship, promoting youth engagement, leveraging digital technology, and prioritising diversity and inclusion. SerbiaCreates fosters innovation, inclusivity, and sustainability within Serbia's creative landscape. The platform aims to support the development of an inclusive and equitable creative sector in Serbia, prioritising the needs of underrepresented groups and promoting gender equality. It provides a space for diverse voices and perspectives, supporting projects and initiatives that promote diversity and inclusion in cultural and creative industries. Related to STEAM, the initiative serves as a vital platform for creative industries, supporting gender equality through various projects and enabling professionals to blend artistic expression with technological innovation through its resources, tools, and networking opportunities.

Source of information:	https://serbiacreates.rs/
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

EQUAL-IST. Gender Equality Plans for Information Sciences and Technology Research Institutions (H2020-EU.5.b.)

PROJECT/INITIATIVE OWNER

VILABS OE, Thessaloniki Greek company

AIM AND MAIN ACTIVITIES

The EQUAL-IST project (Gender Equality Plans for Information Sciences and Technology Research Institutions) aims to introduce structural changes to enhance gender equality in Information Sciences and Technology (IST) research institutions. It promotes gender equality by supporting structural changes in the organisation of research institutions and the content and design of research activities. It has been demonstrated that IST is among the research sectors most affected by gender inequalities at all levels. The project aims to address ERA objectives related to gender equality by supporting seven Research Performing Organisations (RPOs) from Northern, Southern, and Central European countries, as well as one Commonwealth of Independent States (CIS) country, in developing and implementing tailored GEPs. All RPOs forming the EQUAL-IST project consortium are at an initial stage in setting up GEPs, and they have also secured support for GEP implementation from the respective highest management levels.

Source of information:	https://equal-ist.eu/overview/
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

E-STEAM– Equality in Science, Technology, Engineering, Art and Mathematics (Erasmus+ 2018-1-PT01-KA201-047422)

PROJECT/INITIATIVE OWNER

Silves Schools Group (AES), Portugal

AIM AND MAIN ACTIVITIES

Through this project, the consortium established synergies between schools and the labour market to creatively and meaningfully engage girls in STEAM education through a mentoring programme. The project has developed a virtual platform that serves as a resource hub for practical and innovative learning solutions, complementing school curricula. It aims to leverage and disseminate personalised activities through the promotion of this platform.
Results of the project include:

1. State of the art analysis of gender stereotypes and unconscious biases in education using collaborative methods.
2. STEAM Mentoring Scheme.
3. Design of the STEAM Training Programme.
4. E-STEAM Trainer Platform.
5. Piloting and assessment report with recommendations for the Training Programme.
6. Guidelines for exploiting the Business Model Canvas.

Source of information:	http://e-steamerasmusproject.com/
Language and format of information:	English, Bulgarian, website
Thematic focus:	STEAM
Territorial scope:	EU

EU STEM Coalition

PROJECT/INITIATIVE OWNER

Dutch national STEM platform (PTvT) with offices in The Hague and Utrecht (Netherlands)

AIM AND MAIN ACTIVITIES

The EU STEM Coalition is a network of national STEM platforms, European members and national (associate) members. The EU STEM Coalition's main goal is to facilitate best-practice sharing between countries and regions. Through a wide variety of activities and resources, it brings together policymakers and policy shapers to exchange ideas, share experiences, and develop new approaches across a range of areas related to STEM education and the labor market.

Source of information:	http://www.stemcoalition.eu/members
Language and format of information:	English, website
Thematic focus:	STEM
Territorial scope:	EU

GENDER STI - Gender Equality in Science, Technology and Innovation Bilateral and Multilateral Dialogues (H2020-SwafS-2018-2020)

PROJECT/INITIATIVE OWNER

UPM - Polytechnic University of Madrid (Universidad Politecnica de Madrid)

AIM AND MAIN ACTIVITIES

Gender STI is an international research project that aims to analyse the participation of women in science, technology, and innovation (STI) dialogues between Europe and third countries. The project focuses on three key areas: gender equality in scientific careers, gender balance in decision-making processes, and the integration of the gender dimension in research and innovation (R&I) content.

Source of information:	https://www.gender-sti.org/what-is-gender-sti/
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

GE-STEAM: Gender Equality in Science, Technology, Engineering, Art and Mathematics (Erasmus+ 2020-1-RO01-KA201-080189)

PROJECT/INITIATIVE OWNER

Mureș County Educational Resource Center (Casa Corpului Didactic Mures, Romania)

AIM AND MAIN ACTIVITIES

This project „Gender Equality in STEAM Education" is focused on promoting gender equality in preschool, primary, and lower secondary education, aiming to enhance capabilities in reducing stereotypes through the development and testing of innovative and interactive materials using a behavioural science approach. The project aimed to contribute to increased capabilities to reduce stereotypes in preschool, primary, and lower secondary education by developing and testing innovative and interactive materials.

Results:

- Training Programme for Deconstructing Gender Stereotypes in STEAM: Developed a comprehensive training programme to educate educators on identifying and overcoming gender stereotypes in STEAM education.
- Repository for Teachers on Assistant Platform: Established a platform to share resources and materials for teachers to facilitate gender equality in STEAM education.
- Introducing ART in STEM - Guidelines for Teachers and Kit-hands-on self-teach Activities for children: Created guidelines and hands-on activities integrating art into STEM education to promote gender-fair teaching practices. Materials included drawings, posters, pictures, and other art objects representing both art and science in gender-fair teaching.
- Peer Mentoring and Business Mentoring Schemes: Implemented internal peer mentoring among classroom STEAM peer-mentors and external mentoring where teachers and students engaged with business mentors to understand the role of women in business and STEM careers.
- E-book: Compiled all intellectual outputs into an e-book distributed to participants during the Multiplier event, enhancing accessibility and dissemination of project outcomes.

This project aimed to foster an inclusive learning environment and empower educators and students to challenge stereotypes and promote gender equality in STEAM education.

Source of information:	https://gesteamproject.eu/
Language and format of information:	English, Bulgarian, Romanian, Portuguese, website
Thematic focus:	STEAM
Territorial scope:	EU

GILL. Gendered Innovation Living Labs (HORIZON-WIDERA-2022-ERA-01-80 - Living Lab for gender-responsive innovation)

PROJECT/INITIATIVE OWNER

European Network of Living Labs Ivzw, Belgium

AIM AND MAIN ACTIVITIES

Gendered Innovation Living Labs – GILL is an EU-funded project aimed at addressing gender- and diversity-blind spots within the Living Lab discourse and practices. The project focuses on enabling organisational and cultural changes, enhancing professional development, and integrating gender and diversity considerations into product design, technologies, and innovation processes. GILL also promotes gendered educational practices in the domains of Health and Resilience, Green Transition, and Digital Transformation. The project seeks to foster inclusive environments that support the full participation of diverse perspectives in shaping future innovations and technologies.

Source of information:	https://gi-ll.eu
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

I Move project

PROJECT/INITIATIVE OWNER

CAP Sciences

AIM AND MAIN ACTIVITIES

The I MOVE project is a European cooperation initiative focused on developing practical tools related to Diversity, Accessibility, Equity, and Inclusion (DAEI) for professionals in the cultural sector. The aim is to foster an evolution of practices within cultural organisations. Key activities of the project include:

- Supporting organisational staff in identifying DAEI issues within their institutions.
- Developing educational resources that address DAEI topics and promote inclusive practices.
- Upskilling organisations and their staff through training and capacity-building initiatives.

The overarching goal is to create a more inclusive cultural sector that values diversity, ensures accessibility, promotes equity, and embraces inclusion in all aspects of its operations and interactions with the public.

Source of information:	https://imoveproject.eu/
Language and format of information:	English, website
Thematic focus:	STEAM
Territorial scope:	EU

IN2STEAM

PROJECT/INITIATIVE OWNER

CESIE

AIM AND MAIN ACTIVITIES

The aims of the project are:

- To enhance the professional development of teachers and educators in teaching STE(A)M concepts to young children in primary school, with a particular focus on girls, aiming to cultivate creativity, critical thinking, and problem-solving skills.
- To stimulate and cultivate girls' interest in STEM fields through the creation of gender-inclusive teaching methods and open educational resources dedicated to STE(A)M learning in primary education.
- To promote interest in STEM disciplines by implementing inclusive teaching methodologies that inspire young girls to explore their potential and motivation for future careers in the scientific field, challenging gender stereotypes.
- To integrate a 21st-century education strategy aimed at fostering more creative learning environments in primary schools, achieved through interdisciplinary STE(A)M learning approaches that incorporate gender-inclusive practices into the school curriculum.

Source of information:	https://in2steam.eu/
Language and format of information:	English
Thematic focus:	STEAM
Territorial scope:	EU

LeTSGEPs. Leading Towards Sustainable Gender Equality Plans in research performing organisations (H2020-SwafS-2018-2020)

PROJECT/INITIATIVE OWNER

University of Modena and Reggio Emilia, Italy (Universita Degli Studi Di Modena e Reggio Emilia, Italy)

AIM AND MAIN ACTIVITIES

The LeT'S GEPs (Leading European Training on Software for Global Engineering Project Services) project, supported by the European Union, aims to develop and implement software solutions for global engineering project services. It focuses on enhancing the training available to industrial stakeholders and professionals to enable them to effectively manage and optimise industrial projects. The LeT'S GEPS platform offers participants interactive learning, experience sharing, and collaboration opportunities. Its primary goal is to enhance the competitiveness and innovation of European enterprises by improving knowledge and skills in project management and IT technologies. A network of collaborative partners with expertise in engineering design, project management, and IT software development executes the project. LeT'S GEPS has an ambitious mission to contribute to the development of European engineering and industrial sectors while promoting innovation and sustainable development.

Source of information:	https://letsgeps.eu
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

Maker Space

PROJECT/INITIATIVE OWNER

Vilnius Tech, Lithuania

AIM AND MAIN ACTIVITIES

Linkmenų Fabrikas is a maker space, dedicated to all kinds of creative projects, prototyping, and experimenting.

Source of information:	https://vilniustech.lt/linkmenu-fabrikas/103864?lang=2
Language and format of information:	English, info
Thematic focus:	STEAM
Territorial scope:	City/Province

Marker's Red Box

PROJECT/INITIATIVE OWNER

Marker's Red Box

AIM AND MAIN ACTIVITIES

Maker pedagogy can transform education and bridge the gap between education and the labour market. Their conviction is that maker spaces are the key to the future of education. These are the places where children gain relevant skills and find their strengths. They believe that having these modern tools is only half the battle; guidance and inspiration should be provided to the teachers so they can fully utilise them. The benefits of maker education are:

- that teachers no longer have to compete with mobile screens for kids' attention; children can work independently towards their goals while gaining indispensable skills;
- they can create complex personalised objects that work;
- and they learn to deal with failure.

Source of information:	https://makersredbox.com/about-us/
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

Master in Gender perspectives on teaching

PROJECT/INITIATIVE OWNER

University of Bologna

AIM AND MAIN ACTIVITIES

Through multimedia modules and a series of engaging sessions, participants will develop the skills necessary to critically analyse and compare gender-related projects and initiatives both inside and outside the classroom.
In order to address and improve gender dynamics within education, participants will focus on several key areas:

- acknowledge and analyse gender stereotypes which are at play in our society;
- develop critical reflections and practical tools for a gendered approach to schooling to practice education given gender equality principles;
- develop educational projects (in and across disciplines) with a gender-inclusive approach;
- deconstruct the idea of gender "neutral" disciplines.

Source of information:	https://www.unibo.it/en/study/phd-professional-masters-specialisation-schools-and-other-programmes/course-unit-catalogue/course-unit/2020/461004
Language and format of information:	English and Italian, website
Thematic focus:	STEAM
Territorial scope:	Country

Meitner Project. Remembering Lise Meitner

PROJECT/INITIATIVE OWNER

Institute of Corpuscular Physics (IFIC) University of Valencia

AIM AND MAIN ACTIVITIES

Project is incredibly inspiring and impactful! Promoting the role of women in science, particularly in fields like Nuclear and Particle Physics, is essential for achieving social equality and fostering scientific vocations across all genders. Highlighting the historical challenges faced by women scientists is crucial for raising awareness about the barriers that persist today. By incorporating elements such as a stage play, workshops, contests, social media videos, and didactic materials, they are creating a comprehensive approach to engage the public and showcase the contributions of female scientists. This effort not only educates but also inspires and empowers future generations. Projects like this play a pivotal role in shaping a more inclusive and equitable future for science and society. It is truly wonderful to see such dedication to celebrating the achievements of women scientists and addressing the systemic issues they have encountered.

Source of information:	https://recordandoalise.es/en/
Language and format of information:	Spanish, Theater, Workshops, High School Contest, website
Thematic focus:	STEM
Territorial scope:	City/Province

Mobile Bioclassroom

PROJECT/INITIATIVE OWNER

Vilnius University and Thermofisher, Lithuania

AIM AND MAIN ACTIVITIES

The Mobile Bioclassroom is a mobile laboratory that visits various schools across Lithuania, providing students with hands-on experience using real scientific instruments and learning about cutting-edge methods in modern molecular biology. Through the bioclassroom, students engage in hands-on experiments related to DNA, offering them the opportunity to step into the role of scientists for a brief period. This initiative not only enhances their understanding of molecular biology but also inspires a passion for scientific exploration among young minds.

Source of information:	https://www.gmc.vu.lt/gmc-jums/edukacija-moksleiviams/mobili-bioklase
Language and format of information:	Lithuanian, info
Thematic focus:	STEM
Territorial scope:	Country

My World of Work

PROJECT/INITIATIVE OWNER

Skills Development Scotland, UK

AIM AND MAIN ACTIVITIES

The programme organises a variety of hands-on activities designed to stimulate students' interest in STEM fields and provide support to teachers and career professionals. It has proven effective, with over 90% of participating students reporting increased interest in STEM subjects and careers. Key success factors of the programme include hands-on activities involving building, making, and designing; the integration of state-of-the-art technology; engagement of teachers and parents; and strong partnerships with industry to develop advanced educational tools. Additionally, the programme offers virtual activities such as "Meet the Expert" sessions. These 40-minute sessions feature professionals from diverse fields discussing their work, career paths, and offering advice to students interested in pursuing similar careers. Students have the opportunity to interact directly with the experts and ask questions.

Source of information:	https://www.myworldofwork.co.uk/live-inspiring-Activities
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	Country

Newton

PROJECT/INITIATIVE OWNER

First Scandinavia, Norway

AIM AND MAIN ACTIVITIES

A Newton Room provides education in science, technology, engineering, and mathematics (STEM). The educational plans within Newton Rooms are referred to as Newton Modules. These modules feature a diverse curriculum that emphasises hands-on learning through practical activities.

Source of information:	https://newtonroom.com/news/mobile-newton-room-arrives-in-gdansk-to-inspire-young-minds
Language and format of information:	English, info
Thematic focus:	STEM
Territorial scope:	EU

NGSS

PROJECT/INITIATIVE OWNER

Center for Creative Training Association, Bulgaria

AIM AND MAIN ACTIVITIES

The project enhances the professional development of teachers and educators to effectively impart STEM+Arts concepts to young children in early childhood education, with a particular emphasis on girls. This initiative aims to nurture creativity, critical thinking, and problem-solving skills among children.

Source of information:	https://ngss.erasmus.site/#about
Language and format of information:	English, pdf
Thematic focus:	STEAM
Territorial scope:	EU

OTTER - Outdoor Science Education for a Sustainable Future (H2020-SwafS-2018-2020)

PROJECT/INITIATIVE OWNER

Geonardo Environmental Geospatial and Regional Project Development Limited Liability Tarsasag, Hungary (Geonardo Környezetvédelmi Térinformatikai és Regionális Projektfejlesztő Korlatolt Felelossegu Tarsasag, Hungary)

AIM AND MAIN ACTIVITIES

OTTER aims to popularise Education Outside the Classroom. With dedicated educators, students can enhance their scientific knowledge, engage more deeply with STEAM subjects, and develop into responsible citizens. The benefits of this methodology are substantial and can be realised through a variety of activities, including field trips, visits to community and botanical gardens, museums, zoos, scientific centres, community settings, internet resources, enhanced digital learning, and media.

Source of information:	https://otter-project.eu/about
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

Primary Features

PROJECT/INITIATIVE OWNER

Education and Employers charity, UK

AIM AND MAIN ACTIVITIES

The "Primary Features" programme provides primary schools with the chance to collaborate with various professions. Schools can engage with local volunteers or virtually interact with professionals nationwide. Virtual interactions can be conducted either in real-time or through pre-recorded content. Volunteers share insights about their careers, helping students learn about diverse professions and understand how their school education can contribute to a rewarding career. Participation in the programme is free of charge.

Source of information:	https://www.primaryfutures.org/about/
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	Country

Professional Development of Teachers to promote Design Thinking Skills and Academic Success of Students (DTS) (Erasmus+ 2020-1-TR01-KA201-094174)

PROJECT/INITIATIVE OWNER

Istanbul Provincial Directorate of National Education

AIM AND MAIN ACTIVITIES

In this context, the "Professional Development of Teachers to Promote Design Thinking Skills and Academic Success of Students" (DTS) Project aimed to enhance students' academic achievement by supporting the professional growth of educators. The project focused on equipping teachers with resources to effectively teach design thinking skills. Additionally, it aimed to cultivate a design-thinking mindset among teachers, enabling them to integrate design-thinking practices into their teaching methodologies. The project also seeked to bolster the capacity of educational authorities, policymakers, and decision-makers to advocate for and institutionalise design-thinking in education. Ultimately, these efforts are expected to contribute to reducing early school drop-out rates.

Source of information:	• https://dts4teachers.eu/ • https://dts4teachers.eu/wp1/ • https://dts4teachers.eu/wp3/
Language and format of information:	English, Bulgarian, and Turkish, website
Thematic focus:	STEM
Territorial scope:	EU

Road-STEAMer: Developing a STEAM Roadmap for Science Education in Horizon Europe (HORIZON-WIDERA-2021-ERA-01-70: Developing an STE(A)M roadmap for Science Education in Horizon Europe)

PROJECT/INITIATIVE OWNER

The Lisbon Council for Economic Competitiveness ASBL, Belgium (Dr. S.C.)

AIM AND MAIN ACTIVITIES

Road-STEAMer is a collaborative initiative in Europe dedicated to create a comprehensive roadmap for integrating STEAM (Science, Technology, Engineering, Arts, and Mathematics) effectively into science education. Drawing on insights from previous EU-funded projects, national education reforms, and current trends in science education research, Road-STEAMer employs a bottom-up approach that emphasises the active involvement of educators and practitioners. Through evidence-based methods such as literature reviews, data analysis, and critical evaluation of current practices, the initiative aims to provide practical guidance and recommendations for policymakers and stakeholders.
Furthermore, Road-STEAMer seeks to foster collaborations between open science principles and open schooling practices, aiming to create synergies among education, research, industry, and society. This holistic approach not only addresses contemporary challenges in education but also aligns with Europe's broader policy goals, including the Green Deal, digitisation, and societal well-being.

Source of information:	https://www.road-steamer.eu
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

Science reporters: The adventure of knowledge (Reporter@s de la ciencia: La aventura del conocimiento)

PROJECT/INITIATIVE OWNER

Communication and Education Office, University of Barcelona (Gabinete de Comunicación y Educación, Universitat de Barcelona)

AIM AND MAIN ACTIVITIES

"Science Reporters: The Adventure of Knowledge" consists of five Escape Rooms, each containing maps, questions, clues, data, and riddles for participants to solve. These rooms offer immersive experiences centred around different aspects of science:

1. The Adventure of Science: Explore various scientific professions, processes, and methodologies. Discover and learn about the planet while tackling its main environmental challenges.
2. By Profession a Scientist: Embark on a journey through the history of science globally and in Spain. Learn about prominent women scientists and their significant findings and discoveries.
3. Disinformation: Delve into the characteristics and threats of misinformation in the scientific realm. Explore concepts such as Infodemia and Media Literacy, and learn about verifying scientific content online.

These Escape Rooms aim to engage participants in interactive and educational experiences that promote understanding and appreciation of science while addressing important contemporary issues in the field.

Source of information:	https://reporterosdelaciencia.com/
Language and format of information:	Spanish, Escape room game. Mobile and Computer website
Thematic focus:	STEM
Territorial scope:	Country

Scientix

PROJECT/INITIATIVE OWNER

European Schoolnet (EUN) Belgium

AIM AND MAIN ACTIVITIES

Scientix was recognized as the premier community for science education in Europe, aiming to foster collaboration among STEM teachers, education researchers, policymakers, and other stakeholders. Its primary goal was to inspire students to pursue careers in Science, Technology, Engineering, and Mathematics (STEM). Launched in 2010 at the initiative of the European Commission, Scientix was in its fourth stage, known as Scientix 4, which ran from January 2020 to December 2022. European Schoolnet has overseen the project since its inception and coordinates activities from its base in Brussels, collaborating with a consortium of 34 Ministries of Education across Europe. During its initial phase (2009-2012), Scientix established an online portal to showcase European STEM education projects and their outcomes, alongside organising teacher workshops. The highlight of this period was the Scientix conference held in May 2011 in Brussels. The second phase (2013-2015) focused on expanding the community to the national level through National Contact Points (NCPs), fostering national teacher networks, and contributing to the adoption of innovative science and maths education strategies at the national level. This momentum continued into the third phase (2016-2019), which received funding from the Horizon 2020 programme of the European Union, emphasising research and innovation in STEM education. Overall, Scientix serves as a vital hub for advancing STEM education across Europe, promoting collaboration, innovation, and the dissemination of best practices to enhance teaching and learning in science and mathematics Currently, Scientix is transitioning from its fourth phase to a new stage, building on its extensive achievements and impact in STEM education. The project continues to evolve, aiming to further enhance collaboration among educators and stakeholders while adapting to emerging trends and challenges in STEM education..

Source of information:	https://www.scientix.eu
Language and format of information:	English, text
Thematic focus:	STEAM
Territorial scope:	EU

SCIndicator(SCIndikátor)

PROJECT/INITIATIVE OWNER
NaTE
AIM AND MAIN ACTIVITIES
SCIndikátor is Hungary's pioneering science communication mentoring programme designed to assist young researchers in honing their communication skills. Through personalised mentoring and group training sessions offered free of charge, the programme empowers participants to excel as both proficient researchers and confident presenters.

Source of information:	https://nokatud.hu/scindikator/
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	Country

SENSE. The New European Roadmap to STEAM Education (HORIZON-WIDERA-2021-ERA-01-70: Developing a STE(A)M roadmap for Science

PROJECT/INITIATIVE OWNER
Western Norway University of Applied Sciences (Hogskulen Pa Vestlandet)
AIM AND MAIN ACTIVITIES
SENSE is a project dedicated to promoting accessible STEAM education through innovative approaches that integrate art and challenge traditional learning paradigms. The initiative emphasises participation, social inclusion, sustainability, digitisation, creativity, and exploration at its core. SENSE involves a consortium of 11 partners and 6 stakeholders from 14 European countries, working collaboratively to advance STEAM education across Europe.

Source of information:	https://sense-steam.eu
Language and format of information:	English, text
Thematic focus:	STEM
Territorial scope:	EU

SPEAR project: Supporting and Implementing Plans for Gender Equality in Academia and Research (EU Horizon 2020 SwafS-09-2018-2019-2020)

PROJECT/INITIATIVE OWNER

University of Southern Denmark, Denmark (Syddansk Universitet, Denmark)

AIM AND MAIN ACTIVITIES

The University of Plovdiv "Paisii Hilendarski" (PU) is developing and implementing its Gender Equality Plan (GEP) as part of the EU Horizon 2020 project, SPEAR ("Supporting Plans for Gender Equality in Academia and Research"). The primary objectives of the PU team within the SPEAR project include:

1. Identifying and raising awareness of existing gender inequalities, including those that may be hidden, among students and staff.
2. Changing attitudes at PU regarding gender-based traditions and stereotypes prevalent in society.
3. Enhancing the university's reputation and image through proactive gender equality initiatives.
4. Integrating gender dimensions into the organisational, educational, and research activities of the university for the benefit of both students and staff.
5. Increasing women's participation in STEM education and research fields.
6. Promoting and fostering a culture of equality both within and outside PU.

Through these efforts, PU aims to contribute significantly to advancing gender equality in academia and research, thereby creating a more inclusive and supportive environment for all members of its academic community.

Source of information:	https://gender-spear.eu/assets/content/PU_GEP_ENfinalS.PDF https://ibsedu.bg/wp-content/uploads/2023/06/spear_press_release_final.pdf
Language and format of information:	English, .pdf
Thematic focus:	STEM
Territorial scope:	EU

StarT

PROJECT/INITIATIVE OWNER

LUMA Centre Finland (an umbrella organisation of 13 LUMA Centres)

AIM AND MAIN ACTIVITIES

The aim of the StarT programme is to inspire and motivate children and youth to engage with mathematics, science, and technology (STEM). Targeting students from preschool to secondary education, StarT promotes activities and interdisciplinary thinking through collaborative projects. Participants work in groups to develop projects that explore environmental phenomena comprehensively.
Collaboration is a key focus, encouraging interaction within school communities and fostering partnerships between schools, businesses, scientists, and other stakeholders. Learning communities exchange research findings, learn from each other's experiences, and share their ideas broadly. Awards are given to recognise the best ideas and projects developed through the programme.
StarT is not limited to Finland but operates at the international level, providing a platform for global participation and exchange of innovative STEM education practices.

Source of information:	https://start.luma.fi/en/start-programme/start-competition/start-projects/
Language and format of information:	English, videos in Finnish with English subtitles
Thematic focus:	STEM
Territorial scope:	EU

S STEAM centers

PROJECT/INITIATIVE OWNER

STEAM centers in different cities have different owners, Lithuania

AIM AND MAIN ACTIVITIES

The goals outlined focus on promoting STEAM education and enhancing its implementation within schools:

- Encouraging students to pursue STEAM fields of study: Foster interest and enthusiasm among students for STEAM subjects, encouraging them to consider careers in these fields.
- Supporting schools in implementing general education programmes through Centre activities: Provide resources and support to schools in integrating STEAM education into their overall educational framework.
- Creating modern and inspiring STEAM learning environments: Design and establish innovative learning spaces that facilitate hands-on and experiential learning in STEAM disciplines.
- Improving the competencies and qualifications of science teachers: Offer professional development opportunities to enhance the skills and qualifications of teachers in teaching STEAM subjects effectively.
- Providing vocational guidance for pupils: Offer guidance and information to students about career opportunities in STEAM fields, helping them make informed educational and career choices.
- Promoting STEAM achievements: Highlight and celebrate achievements in STEAM education to inspire students and showcase the importance and impact of STEAM disciplines in society.

These goals collectively aim to nurture a supportive and enriching environment that encourages students to explore, engage with, and excel in STEAM education and careers.

Source of information:	https://steamlt.lt
Language and format of information:	Lithuanian, online info
Thematic focus:	STEAM
Territorial scope:	Country

STEAM laboratory (STEAM laboratorija)

PROJECT/INITIATIVE OWNER

KMSC - Klaipėda Students' Self-Expression Center, Lithuania

AIM AND MAIN ACTIVITIES

The Klaipėda Students' Self-Expression Center is a municipal institution dedicated to non-formal education of children. It offers experiential learning opportunities across a diverse range of subjects including technical creativity, nature knowledge, tourism, local history, and aesthetic-artistic activities. Children are invited to participate in various engaging programmes such as technical modelling and construction, travel and hiking, bouldering and climbing, Lego robotics and computer programming, natural sciences, ceramics, media studies, and more. These activities cater to children who enjoy creative and hands-on learning experiences. The Center provides modern educational spaces and equipment, ensuring a rich curriculum that includes both educational content and practical activities. Participants can expect to gain practical knowledge, have fun, and engage in meaningful leisure activities. Additionally, the Center hosts a variety of events, exhibitions, competitions, and festivals where children can meet new friends, showcase their talents, and explore their interests further. Klaipėda Students' Self-Expression Center serves as a vibrant hub for non-formal education, fostering creativity, practical skills, and personal development among its young participants.

Source of information:	https://www.facebook.com/groups/steamlaboratorijakmsc/
Language and format of information:	Lithuanian, online info
Thematic focus:	STEAM
Territorial scope:	City/Province

STEAME TEACHER FACILITATORS ACADEMY

PROJECT/INITIATIVE OWNER

University of the National Education Commission, Krakow

AIM AND MAIN ACTIVITIES

The STEAME Teacher Facilitators Academies aim to facilitate the training of both in-service teachers and student teachers. These academies will provide structured support and educational resources to enhance the skills and knowledge of teachers currently working in the field (in-service teachers) as well as those preparing to enter the profession (student teachers).

Source of information:	https://steame-academy.eu
Language and format of information:	English, pdf
Thematic focus:	STEAM
Territorial scope:	EU

STEAMitUp - a collection of best practices (Erasmus+ 2019-1- UK01-KA201-061990)

PROJECT/INITIATIVE OWNER

CARDET, Cyprus

AIM AND MAIN ACTIVITIES

To promote STEAM education in the EU and beyond, the STEAMitUp consortium has compiled a list of 25 Best Practices (BPs) through extensive desk research. These best practices encompass various strategies, methods, technological tools, applications, and materials aimed at fostering students' digital skills, including collaboration, problem-solving, and critical thinking. The list is presented in tabular form and includes several exemplary EU initiatives that serve as models for implementing effective STEAM education practices worldwide.

Source of information:	https://steamitup.eu/en/
Language and format of information:	English, info
Thematic focus:	STEAM
Territorial scope:	Country

STEM Learning

PROJECT/INITIATIVE OWNER

STEM Learning, UK

AIM AND MAIN ACTIVITIES

STEM Ambassadors are professionals from diverse STEM fields (i.e. computer scientists, engineers, and geologists) who volunteer to share expertise with children and young people. They collaborate with schools (all levels) as well as youth and community organisations. A user-friendly system facilitates connections between schools, organisations, and ambassadors through a free app. Activities organised by STEM Ambassadors occur in school settings and workplaces. These activities encompass a wide range, including career interviews, workshops, assistance with school events, and providing advice to teachers. Monitoring of the programme outcomes indicates that participation stimulates students' interest in STEM subjects and enhances teachers' enthusiasm for teaching these subjects. Students and teachers gain a better understanding of the relevance, applicability, and career opportunities within STEM fields through interactions with STEM ambassadors.

Source of information:	https://www.stem.org.uk/stem-ambassadors
Language and format of information:	English, text, video
Thematic focus:	STEM
Territorial scope:	EU

T@T Kuckó

PROJECT/INITIATIVE OWNER

T@T Labor

AIM AND MAIN ACTIVITIES

The aim of T@T Kuckó is to integrate public education, teacher training, and the development of educational technology. It functions as a technological playground accessible to people of all ages—students, teachers, and developers alike. This environment is designed to facilitate a wide range of community activities, including formal school or university classes, non-formal professional circles or workshops, and informal experiences for children and families, all at a cost-effective scale. Additionally, Kuckó serves as a hub for learning and utilising the latest technologies in educational settings. Students are encouraged to develop apps, tools, methodologies, teaching materials, and sessions using these technologies. These creations can be distributed locally and online, allowing for mentored learning experiences that empower participants to master modern educational tools effectively.

Source of information:	http://tet.inf.elte.hu/tetkucko/a-kuckorol/
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	Country

T@T Labor

PROJECT/INITIATIVE OWNER

ELTE, Department of Media and Educational Informatics of the Faculty of Informatics

AIM AND MAIN ACTIVITIES

The goal is to create experiential learning environments within education by leveraging the latest emerging technologies in educational, research, and development activities. The objective is to establish innovative informal learning installations that serve not only as tools for formal learning but also as engaging platforms for sparking interest and conveying the experience of discovery in diverse settings, such as museums. These installations are designed to immerse learners in hands-on, experiential learning opportunities that foster curiosity, critical thinking, and creativity. By integrating cutting-edge technologies, the initiative aims to enhance traditional educational approaches and broaden the scope of learning experiences beyond conventional classroom settings. The ultimate aim is to inspire learners and educators alike through dynamic and interactive learning environments that promote lifelong learning and innovation.

Source of information:	http://tet.inf.elte.hu/rolunk/
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	Country

Take the Idea

PROJECT/INITIATIVE OWNER

Digital Serbia Initiative

AIM AND MAIN ACTIVITIES

The Digital Serbia Initiative, in partnership with USAID, launched the "Take the Idea" project in 2023, with a significant component being the release of the "Women in the Serbian Startup Ecosystem 2023" report. This report offers a comprehensive analysis of the presence and roles of women within Serbian startup companies. The report plays a crucial role in identifying current trends and future developmental directions within the Serbian startup ecosystem. It highlights critical challenges and gaps, offering a foundation for targeted initiatives and projects aimed at improving conditions within the ecosystem. Importantly, the initiative is designed not only to enhance the overall startup environment but also to specifically address challenges faced by women in this sector. While the project is not explicitly focused on women or girls in STEM/STEAM fields, it is inclusive of the general public, with opportunities for female participation and engagement across various aspects of the startup ecosystem in Serbia. Key aspects covered include:

1. Representation in Startup Companies: Detailed examination of the number of women in leadership and managerial roles within Serbian startups, alongside factors that may hinder greater participation.
2. Education and IT Programmes: Exploration of girls' interest in IT educational Programmes, drawing insights from data sourced through the Startup Scanner 2023. This information is further enriched by interviews and focus groups to provide a deeper understanding of women's positions in the digital community.

Source of information:	https://www.preduzmi.rs/zene-u-srpskom-startap-ekosistemu-2023
Language and format of information:	Serbian, text
Thematic focus:	STEM
Territorial scope:	Country

Teachers' Day (Tanárok napja)

PROJECT/INITIATIVE OWNER

NaTE

AIM AND MAIN ACTIVITIES

The programme aims to provide science teachers and class teachers with first-hand exposure to the fields of engineering, IT, and other future-oriented professions through a specially organised one-day event. The primary objectives include:

1. Experiential Learning: Participants engage directly with the world of engineering, IT, and research, gaining practical insights into these professions.
2. Professional Engagement: Teachers visit technology companies or research institutes, where they participate in professional discussions with employees and observe their work processes first-hand.
3. Knowledge Sharing: Teachers acquire knowledge about the skills and competencies required in technical and engineering careers. They can then share this information with their students to better prepare them for future career opportunities.
4. Career Orientation: The programme helps teachers guide their students by offering realistic perspectives on technical and research careers, including the opportunities and expectations within the STEAM field.

General aim is to empower teachers with practical experiences and insights that can enrich their teaching and better prepare students for future career paths in STEM.

Source of information:	https://nokatud.hu/tanarok-napja/
Language and format of information:	Hungarian, text
Thematic focus:	STEAM
Territorial scope:	Country

TryEngineering IEEE/Girls in STEM Events

PROJECT/INITIATIVE OWNER

IEEE (Institute of Electrical and Electronics Engineers)

AIM AND MAIN ACTIVITIES

TryEngineering aims to empower educators to cultivate the future generation of technology innovators. As an initiative of IEEE, the world's largest technical professional organisation dedicated to advancing technology, TryEngineering provides educators and students with a wealth of resources, curricula, and activities designed to engage and inspire.
Through TryEngineering, educators gain access to comprehensive tools and materials that facilitate hands-on learning experiences in science, technology, engineering, and mathematics (STEM) fields. These resources are tailored to encourage creativity, problem-solving skills, and a deep understanding of technological principles among students.

Source of information:	https://tryengineering.org/bg/category/events/girls-in-stem/
Language and format of information:	English, website
Thematic focus:	STEM
Territorial scope:	EU

Vedliai

PROJECT/INITIATIVE OWNER

Vedliai

AIM AND MAIN ACTIVITIES

Curriculum materials aligned with the standard curriculum, incorporating computer science for grades 1-4 and 5-8. Projects designed to enhance children's creativity. Lesson plans and scenarios aimed at saving teachers' time. Mentorship and community support.

Source of information:	www.vedliai.lt
Language and format of information:	Lithuanian, info
Thematic focus:	STEM
Territorial scope:	Country

WOMEN & SCIENCE

PROJECT/INITIATIVE OWNER

University of Alicante (Universidad de Alicante)

AIM AND MAIN ACTIVITIES

The initiative is designed to celebrate the International Day of Women and Girls in Science. Its primary objective is to raise awareness of and celebrate the contributions of women in science, highlighting their role in scientific and social advancement. The programme targets educational institutions, municipalities, and non-profit organisations dedicated to emphasising the significance of women's contributions in advancing both science and society. The initiative aims to bring role models in science closer to the general public, particularly young generations, to inspire and encourage future participation in STEM fields.

Source of information:	https://divulga.ua.es/es/secciones/11-febrero-dia-de-la-mujer-y-la-nina-en-la-ciencia/mujer-y-ciencia-2024/mujer-y-ciencia-2024.html
Language and format of information:	Spanish,Workshops, talks, website
Thematic focus:	STEM
Territorial scope:	City/Province

Women in Science: Present, Past and Future

PROJECT/INITIATIVE OWNER

Sevilla University (Universidad de Sevilla)

AIM AND MAIN ACTIVITIES

It's a scientific theatre initiative where five researchers from the University of Seville portray five historical scientists, engaging in conversations about their lives and inviting them to join the vibrant world of science. This project aims to underscore the significance of science, foster interest in scientific careers, and showcase the contributions of women in science. Specifically, the initiative seeks to inspire girls by providing role models they can relate to and aspire to emulate in the field of science.

Source of information:	https://institucional.us.es/cientificas/
Language and format of information:	Spanish, theatre, video
Thematic focus:	STEM
Territorial scope:	Country

Women in STEM

PROJECT/INITIATIVE OWNER

STEMbg

AIM AND MAIN ACTIVITIES

In the STEMbg project, the goal is to highlight the achievements of Bulgarian women who have made significant strides in the fields of science, technology, engineering, and mathematics (STEM). Women with intriguing and adventure-filled careers in these areas are encouraged to share their experiences by completing a questionnaire. By participating, they have the opportunity to inspire young girls as they consider their own career paths.

Source of information:	https://stembg.org/
Language and format of information:	English, Bulgarian, website
Thematic focus:	STEM
Territorial scope:	Country

3. PRESENTATION OF THE INTERVIEWED PROJECT/INITIATIVES

The following report offers an overview of the profiles and implementation details of projects and initiatives where owners were interviewed. It highlights the diverse range of stakeholders involved, including consortia, public organisations, NGOs, universities, and companies. The objective is to showcase the breadth of projects undertaken and the sectors they represent.

The methodology for selecting interviewees initially involved identifying the owners of best practices mapped in D 2.2, which served as the starting point. Preference was also given to projects that received EU funding and were implemented by consortia across multiple countries, thereby achieving a broader impact. In total 17 interviews with the projects/initiative's owners were conducted (Table 1).

In Table 1, the projects/initiatives owners are categorised by type of organisation:

- Consortia play a pivotal role in implementing 6 diverse projects and initiatives. These collaborations involve multiple stakeholders pooling resources and expertise to achieve common goals across various sectors.
- Public organisations lead the implementation of 6 projects/initiatives. These include local governments, ministries, and universities, each contributing specialised knowledge and infrastructure to drive impactful initiatives. Out of a total of six public organisations, universities are actively engaged in implementing 5 projects/initiatives. These institutions leverage academic research, teaching capabilities, and student involvement to innovate and address societal challenges through their projects.
- NGOs are driving forward 3 projects/initiatives aimed at social, environmental, or developmental issues. Their advocacy, community engagement, and operational expertise are crucial in implementing projects that benefit diverse communities.
- There are 2 projects being carried out by companies / private entities.
- The total number of projects/initiatives implemented exclusively for women/girls is ten.

In this chapter, it is delved into initiatives and projects aimed at promoting STE(A)M education and fostering inclusivity, with a particular focus on engaging girls and women. All consortium members conducted desk research and selected representative projects and initiatives from the mapped ones. Interviews with institutional stakeholders (project/initiative owners) were conducted, and summaries are presented in Annex 2. Each chosen initiative represents a unique approach to addressing the gender gap in STE(A)M fields, emphasising early exposure, supportive environments, and equal opportunities.

The projects and initiatives related only to girls/women that were dug deeper include FeSTEM, the Hypatia project, International Girls in ICT Day, the Inventoras project, the SEER project, SGA Empowers, The Girls Go Circular programme, Women in Science, and the ZEF camp. In addition to these projects, are projects/initiatives related to all target groups: CodeAcademy Kids, Gender STI, IN2STEAM, the OTTER Project, Project GILL, the Road-STEAMer Project, and The Robotics Academy. Although these projects do not exclusively target women and girls, their significance in enhancing the participation of girls in STE(A)M is noteworthy. One of the ways to boost the involvement of girls in STE(A)M is by engaging the broader community and involving all stakeholders who can influence this goal. Primarily, this involves educators, namely teachers and instructors in primary and secondary schools, as well as representatives of local authorities and the public sector in general. The projects presented here exemplify the importance of involving all relevant stakeholders in promoting STE(A)M among girls.

Within Annex2 each project/initiative is examined in detail: motives and inspirations, project descriptions, key outcomes in supporting target groups in STE(A)M, and stakeholder involvement. These sections provide valuable insights into the multifaceted efforts to promote STE(A)M education and foster inclusivity, particularly for girls and women. Through these detailed explorations, we gain a comprehensive understanding of the strategies and impacts of these initiatives in closing the gender gap in STE(A)M fields.

Table 1. Projects/initiatives which owners were interviewed by the type of organisation that implemented them

PROJECT/INITIATIVE TITLE	PROJECT/INITIATIVE OWNER	TYPE OF ORGANISATION	TARGET GROUP OF THE PROJECT/INITIATIVE
CODE ACADEMY KIDS	Code Academy Kids	Private entity, SME	different target groups
GENDER STI	Polytechnic University of Madrid (UPM)	Consortium	different target groups
FESTEM	Cyprus University of Technology (CUT), Cyprus, Greece	Public/university	girls/women
HYPATIA PROJECT	Nemo Science Museum (Amsterdam)	Public	girls/women
IN2STEAM	Cesie, non-profit organisation (Palermo, Italy)	Consortium	different target groups
INTERNATIONAL GIRLS IN ICT DAY	Association of Business Women of Serbia (ABW Serbia)	NGO	girls/women
INVENTORAS PROJECT	Polytechnic University of Madrid (UPM)	Public/university	girls/women
OTTER PROJECT	Geonardo (Hungary, Budapest)	Consortium	different target groups
PROJECT GILL	Enoll international association-European network of living labs	Consortium	different target groups
ROAD-STEAMER PROJECT	Lisbon Council	Consortium	different target groups
SEER PROJECT	Eun partnership AISBL (Belgium)	Consortium	girls/women
SGA EMPOWERS	Serbian video game industry association	Public	girls/women
STEAM Camp	Knowledge Economy Forum (ZEF)	NGO	girls/women
THE GIRLS GO CIRCULAR PROGRAMME	Junior achievement Serbia	NGO	girls/women
THE ROBOTICS ACADEMY	Robotikos akademija	Private entity, SME	different target groups
WOMEN IN SCIENCE	The project, initiated by a professor of microbiology at the University of Navarra and director of the Museum of natural	Public/university	girls/women

	sciences at the University of Navarra		
ZEF CAMP	Center for Development Research (ZEF), Bonn, Germany	Public/university	girls/women

4. ANALYSIS OF CHALLENGES FROM INTERVIEW SUMMARIES

The engagement of the target groups in projects is multifaceted, with communication and dissemination being pivotal to reaching the intended audiences. Many interviewees noted the project's efforts and the challenges encountered in this process. Key issues include generational communication gaps, gender-based content design, and difficulties in engaging educators and students online. Additionally, logistical hurdles in organising events and reaching remote or disadvantaged groups further complicate these efforts. Despite these challenges, the commitment of project teams plays a crucial role in overcoming obstacles and achieving success.

This chapter is divided into three subchapters related to different groups of challenges: analysis of challenges in engaging the target groups, analysis of challenges within the consortium, and analysis of challenges in sustaining the project.

4.1 ANALYSIS OF CHALLENGES IN ENGAGING THE TARGET GROUPS

The engagement of the target groups occurs on multiple levels. A critical aspect of this engagement involves communication and dissemination, which often aim to extend the project's reach to its intended audiences. Almost all interviewees discussed the project's efforts to engage their target groups and the difficulties they encountered. The following challenges were identified in relation to reaching different target groups and communicating project results:

- **Communication with Younger Generations:** Involving students directly in project activities can present a range of communication and scheduling challenges, particularly when balancing their school and personal commitments. For instance, coordinating student participation often requires aligning with school timetables, extracurricular activities, and family schedules, which can lead to conflicts and delays. The generational gap in communication methods exacerbates these issues; while the project may rely on traditional channels like email for communication, students may prefer more instantaneous and informal platforms such as WhatsApp. This discrepancy can lead to delays in responses and difficulties in maintaining consistent engagement. Despite these obstacles, the project's success hinges on its ability to effectively manage these communication challenges and adapt to the preferred methods of younger audiences. Addressing this requires adopting a flexible communication strategy that incorporates a variety of channels and ensures timely updates and interactions with students.
- **Content Design and Stereotypes**: The design of educational activities plays a crucial role in attracting and retaining participants, yet content that fails to align with students' interests can deter engagement. For example, STEAM activities that focus heavily on competitive or action-oriented games, like "shoot & catch" coding classes, might be more appealing to boys and less engaging for girls who may prefer projects that emphasise creativity, collaboration, and aesthetic design. This mismatch can perpetuate gender stereotypes and discourage girls from participating, as they may perceive these activities as not catering to their interests or strengths. Moreover, if

educational projects are predominantly designed with male interests in mind, it can result in a lack of genuine equal opportunity for girls, reinforcing the notion that STE(A)M fields are not for them. To overcome these challenges, it is essential to design inclusive activities that reflect diverse interests and learning styles, actively seeking to balance competitive elements with creative and collaborative projects that appeal to all students.

- **Engaging Educators:** Engaging educators in STE(A)M initiatives is critical for the success of educational projects, yet it often proves challenging due to the lack of direct involvement and insufficient training on gender inclusivity. Educators need to be equipped with the knowledge and skills to foster an inclusive environment that recognizes and supports all students, regardless of gender. This involves not only training educators to identify and address gender biases but also incorporating diverse role models and examples into the curriculum. Educators should be encouraged to celebrate achievements across gender lines and actively support students in pursuing STE(A)M activities. Mentoring and networking opportunities are also vital, as they provide students with role models and guidance. Workshops that focus on developing soft skills, such as communication and problem-solving, further enhance educators' ability to create an inclusive and supportive learning environment. Effective engagement of educators requires ongoing professional development and a commitment to integrating inclusive practices into their teaching.
- **Engaging students in online activity:** The shift to online learning, accelerated by the COVID-19 pandemic, has posed significant challenges in maintaining student engagement, especially in STE(A)M programs. The prolonged period of online education has led to fatigue and decreased motivation among students, making it difficult for teachers to keep them engaged in virtual STE(A)M activities. Teachers face the dual challenge of maintaining student interest and adapting their teaching strategies to online platforms. Effective engagement requires innovative approaches to online learning, such as interactive and multimedia-rich content, regular feedback, and opportunities for virtual collaboration. Rewarding schools with high participation rates has been identified as an effective strategy to sustain motivation and engagement. However, the success of such initiatives depends on the ability to continuously adapt to students' evolving needs and preferences, ensuring that online STE(A)M activities remain relevant and engaging.
- **Low Completion of Satisfaction Questionnaires:** The collection of feedback through satisfaction questionnaires is essential for evaluating the effectiveness of educational programs and identifying areas for improvement. However, obtaining sufficient responses can be challenging, as participants may not always complete or return these questionnaires. Low response rates can result from various factors, including survey fatigue, lack of time, or perceived irrelevance of the feedback request. To improve response rates, it is important to design questionnaires that are concise, relevant, and easy to complete. Additionally, offering incentives for participation, such as recognition or rewards, can encourage more individuals to provide feedback. Engaging directly with participants and emphasising the importance of their input in shaping future improvements can also help increase response rates and ensure that the feedback collected is representative and actionable.
- **Motivating Students:** Motivating students to engage in educational activities can be a complex task, particularly when trying to sustain interest over time. Effective motivation strategies often involve understanding students' individual interests and aligning activities with their preferences. Teachers play a crucial role in monitoring progress and maintaining motivation by creating a supportive and encouraging learning environment. Rewarding schools with high participation rates has been identified as a successful approach to incentivize engagement. However, motivating students also requires addressing diverse learning styles and providing opportunities for personal growth and achievement. Implementing strategies that recognize and

celebrate student accomplishments, offer varied and interactive learning experiences, and provide meaningful feedback can help sustain motivation and encourage continued participation in educational activities.

- **Organising Large-Scale Events:** Organizing large-scale events that involve students from multiple schools and regions can be a formidable challenge. Coordinating logistics for events such as company visits on International Girls in ICT Day requires meticulous planning and synchronisation of schedules across different schools and regions. The complexity increases with the need to align event dates with school calendars, vacations, and other academic commitments. For example, organising attendance for 250 girls from various parts of Serbia at a final event involves significant logistical coordination, including transportation, accommodation, and scheduling. Successfully managing these events necessitates robust organisational strategies, clear communication with all stakeholders, and contingency plans to address any unforeseen issues that may arise. Effective event planning is crucial for ensuring that large-scale initiatives run smoothly and achieve their intended objectives.
- **Reaching Remote and Disadvantaged Groups:** Engaging target groups from remote and disadvantaged backgrounds presents significant challenges, particularly when resources for travel and participation are limited. Schools and regions differ widely in their readiness and advancement in STE(A)M education, which can affect their ability to participate in and benefit from educational programs. In areas where teachers are already employing advanced methods, introducing new or innovative ideas can be difficult due to entrenched practices and resistance to change. Conversely, in regions facing systemic issues within the educational system, such as inadequate resources or support, the implementation of STE(A)M initiatives can be hindered by fundamental barriers. Funding is a critical issue, as securing financial support for transportation, teacher replacement during activities, and other logistical needs can be challenging. To address these challenges, it is essential to develop targeted strategies that account for regional differences, provide additional support to underserved areas, and collaborate with local organisations to facilitate participation.
- **Relations with Ministries and government bodies:** Establishing and maintaining effective relationships with ministries and government bodies can be challenging, particularly when securing initial funding and support. Engaging with these governing bodies often involves navigating complex bureaucratic processes and demonstrating the value of the project to secure financial and institutional backing. For example, the "Inventoras" project initially struggled to obtain funding but eventually received support from the Spanish Foundation for Science and Technology. During implementation, the project faced additional hurdles, such as producing promotional materials and managing online advertisements, but overcame these challenges through perseverance and effective stakeholder engagement. Positive feedback from researchers and institutions highlights the importance of building strong relationships with governmental and funding bodies to ensure the success and sustainability of educational initiatives.
- **Sustaining Teacher Interest:** Maintaining teacher interest throughout the duration of a project, especially among those already experienced in STE(A)M education, can be challenging. Transitioning to new teaching methods, such as student-centered learning approaches, requires significant adjustments and can be met with resistance. This shift demands that educators build students' confidence in exploring and solving problems independently, which represents a departure from traditional teacher-led instruction. Additionally, ensuring that educators and stakeholders share a common understanding of concepts like gendered innovation and co-creation requires substantial training and effort. To sustain teacher interest, it is important to provide ongoing professional development, support for implementing new methods, and opportunities for collaboration and sharing best practices. Recognizing and

addressing the challenges faced by educators in adapting to new approaches can help maintain their engagement and commitment to the project.

- **Visibility and Accessibility:** Enhancing the visibility and accessibility of a project, particularly in reaching the targeted number of schools, is an ongoing concern. Ensuring that educational initiatives are effectively disseminated and accessible to a wide audience requires continuous effort and strategic planning. In regions with limited dissemination, increasing visibility involves developing targeted outreach strategies, leveraging local networks, and using various communication channels to reach potential participants. Accessibility also includes addressing barriers such as language, technology, and geographic location to ensure that all interested schools and students can engage with the project. Ongoing efforts to improve visibility and accessibility are crucial for maximising the impact of educational programs and ensuring that they reach their intended audience.
- **Stakeholder engagement:** Engaging organisations and stakeholders who are not yet committed to gender equality can be a complex task. Finding effective tools and methods for engaging these parties involves identifying their interests and concerns, and demonstrating the value of gender equality initiatives. Building partnerships with organisations that have not previously focused on gender issues requires strategic communication, presenting evidence of the benefits of gender inclusivity, and offering opportunities for collaboration. It is important to develop tailored engagement strategies that address the specific needs and motivations of these stakeholders. By fostering meaningful partnerships and demonstrating the impact of gender equality initiatives, projects can encourage broader support and commitment to creating inclusive and equitable educational environments.

4.2 ANALYSIS OF CHALLENGES WITHIN THE CONSORTIUM

Challenges within the consortium stem from the diverse backgrounds and expertise of partners, the success of effective communication among them, and the overall quality of project management. Specific challenges include:

- **Lack of Knowledge on Gender-Related Topics:** Initial and ongoing gaps in knowledge about gender-related topics can significantly impede the progress of the project. These gaps often stem from insufficient training or exposure to current research on gender dynamics, which can result in inconsistencies in how gender inclusivity is approached and implemented. When consortium members lack a thorough understanding of gender issues, such as implicit biases, stereotypes, and the impact of these factors on educational outcomes, it becomes challenging to design and execute interventions that effectively address these issues. Moreover, without a shared knowledge base, partners may struggle to develop cohesive strategies and policies that are aligned with best practices in gender inclusivity. To mitigate this challenge, it is essential for the consortium to invest in targeted training programs and knowledge-sharing initiatives that focus on gender issues. This can include workshops led by experts in gender studies, developing a comprehensive framework for gender-sensitive approaches, and fostering continuous dialogue on gender-related topics to ensure that all partners are informed and engaged in promoting gender equity throughout the project.
- **Partner's Diverse Expertise and Cultural Backgrounds:** The diverse expertise and cultural backgrounds of consortium partners can create significant challenges in achieving mutual understanding, particularly when addressing gender-related issues. Differences in professional experience, cultural norms, and educational philosophies can affect how gender issues are perceived and addressed across various contexts. For example, teachers' attitudes towards STE(A)M activities can be influenced by cultural stereotypes and biases, which may lead to the belief that

STE(A)M subjects are more suited for boys. This perception can discourage girls from participating in STE(A)M activities, as teachers may unintentionally reinforce

these stereotypes by suggesting that certain subjects or activities are not suited to their interests. Similarly, parents' cultural expectations and preferences can play a critical role in shaping their children's extracurricular choices. Often, parents may encourage their daughters to engage in traditionally feminine activities like dance or sports rather than exploring technology-related options. To address these challenges, the consortium must focus on fostering cross-cultural understanding and developing strategies that are sensitive to the diverse backgrounds of all partners. This can involve creating inclusive educational materials, engaging in cultural competency training, and establishing collaborative platforms where partners can share insights and strategies for overcoming gender biases.

- **Simultaneous Activities in the Project:** The management of simultaneous activities within the project can present a significant challenge for consortium partners. Coordinating multiple initiatives concurrently often leads to a high volume of tasks and responsibilities, which can overwhelm the partners and strain their resources. Ensuring the long-term success of STE(A)M initiatives requires meticulous planning and effective management of these simultaneous activities. Each activity may demand different levels of attention, resources, and coordination, making it challenging to maintain consistent progress across all areas. Additionally, sustaining the impact of STE(A)M projects often involves complex issues such as securing ongoing funding, adapting educational policies, and integrating changes into existing curricula. Without a well-developed sustainability plan, it becomes difficult to preserve the momentum and effectiveness of these initiatives over time. To address these issues, it is crucial to establish clear management structures, allocate resources efficiently, and develop comprehensive sustainability strategies that outline long-term goals and methods for maintaining the project's impact.
- **Turnover within Organisations:** Staff turnover within organisations can have a profound effect on project timelines and overall efficiency. When experienced team members leave, their departure creates a knowledge gap that new staff members must fill, which can disrupt the continuity of the project. The transition period required for new staff to acclimate to the project's objectives and processes often results in delays and a temporary slowdown in progress. This challenge is further compounded by the reliance on limited funding and volunteers, which can constrain resources and hinder the ability to maintain project momentum. The need for new staff to undergo training and familiarise themselves with ongoing work can stretch the project's timelines and affect its quality. Organisations may also face difficulties in upholding the project's original vision and goals during this period of transition. To mitigate the impact of turnover, it is important for organisations to implement effective knowledge management practices, such as documenting processes and maintaining comprehensive project records. Additionally, investing in staff retention strategies and providing robust support systems for new team members can help minimise disruptions and ensure a smoother transition between staff.

4.3 ANALYSIS OF CHALLENGES IN SUSTAINING THE PROJECT

Sustaining the project involves challenges related to exploring STE(A)M topics and implementing specific project results:

- **Conceptualisation of STEAM:** The concept of STE(A)M is not universally recognised or understood across different cultures, necessitating alternative approaches to introduce and explain STE(A)M concepts in various countries. This involves finding innovative entry points to align local practices with the project's goals. As one interviewee noted: "*Sometimes like in my own country STEAM is not a thing STEAM,*

they don't do STEAM, they don't call it STEAM, even when they do it's just a foreign word that doesn't mean anything, STEM more or less they've heard it for so many years that they understand what STEM is, but mostly you would talk about science education and maybe you have to find other ways of approaching saying how do you approach innovative science education and then you can find the person and then maybe you even discover that this is actually STEAM, you're just not calling it STEAM, and it will tell you yeah, that's not a thing in my country, we call it something else. So I think a lot of it is to try and find the entry point oftentimes." (Representative of Road-STEAMer project)

- **Education System Constraints:** The education system often presents constraints that can limit teachers' ability to engage in programs or pilot activities. Rigid school year schedules and stringent national curriculum requirements can restrict teachers from participating in extracurricular initiatives or innovative projects. These constraints may include predetermined class schedules, standardised testing periods, and fixed curriculum frameworks that leave little room for additional activities. As a result, teachers may struggle to integrate new programs into their already packed schedules or may face difficulties in adapting to pilot activities that are not aligned with their mandated teaching responsibilities. Furthermore, the pressure to adhere to national curriculum standards can create additional barriers, as teachers must prioritise compliance with these requirements over exploring new educational opportunities. These systemic limitations can hinder the flexibility needed for effective implementation of new initiatives and impact the overall success of educational programs.
- **Industry Connection:** The increasing complexity of STE(A)M education's connection with industry can be viewed as problematic, as schools should remain independent, as one of the interviewees explained (representative of the Digital Serbia initiative), and not guided by industrial interests. Introducing girls to STEM opportunities early on is crucial. For example, the initiative Digital Serbia aims to connect 7th and 8th graders with the gaming industry, but currently, it only focuses on high school girls. Expanding these connections to younger students is important for early engagement.
- **Institutional Diversity:** Primary and secondary schools encounter a range of challenges due to institutional diversity, which significantly complicates the implementation of inclusive STE(A)M education approaches. Each school operates under its own set of regulations and policies, which can vary widely depending on the region, district, or even the individual institution. This diversity in rules and guidelines can create inconsistencies in how educational programs are applied and can hinder the uniform adoption of inclusive practices. Additionally, the disparity in available resources—such as funding, teaching materials, and technological tools—further exacerbates these challenges. Schools with limited resources may struggle to provide the necessary support for effective STEAM education, while those with more resources may still face difficulties in adapting to and integrating inclusive methods that cater to all students. This lack of uniformity in resources and regulations complicates efforts to create equitable and effective STEAM learning environments across different educational settings. The resulting variations in institutional capacity and support can impede the overall effectiveness of inclusive educational initiatives and impact the ability to achieve consistent and widespread implementation of STEAM education.
- **Public Guidelines:** Public guidelines for STEM education exhibit significant inconsistency across European countries, creating a fragmented landscape in how STEM subjects are approached and implemented. In some countries, guidelines focus narrowly on specific disciplines such as mathematics or physics, often neglecting a broader, integrated view of STEM education. These limited guidelines may provide detailed frameworks for certain subjects but fail to address the interdisciplinary nature of STEM or the need for a holistic approach that incorporates all relevant fields. Conversely, other countries may lack comprehensive white papers

or strategic documents outlining a clear vision and plan for STEM education. The absence of such comprehensive plans can lead to a lack of cohesion and direction in STEM initiatives, making it difficult for educators and institutions to align their efforts with broader educational objectives. This variability in guidelines can result in uneven quality and effectiveness of STEM education across different regions. Collaboration through networks like the European SchoolNet plays a crucial role in bridging these gaps by facilitating the exchange of best practices and promoting collaboration among educators and policymakers. However, the fundamental challenge remains that the absence of consistent public guidelines across Europe creates hurdles for the development and implementation of effective and cohesive STEM education strategies. Without standardised guidelines, efforts to improve and harmonise STEM education can be hampered, leading to disparities in educational opportunities and outcomes for students across the continent. .

- **Resource Availability:** Reliance on resources in national languages can limit the inclusion of certain scientific or national policy results. Organising STEM camps for girls, like ZEF camp, can face several issues. Ensuring financial support, managing fatigue in day camps, securing parental consent, and addressing logistical challenges like transportation and accommodation are key concerns. Additionally, catering to diverse knowledge levels among participants and receiving teacher feedback are critical for improving future camps. Resource availability is a crucial factor in sustaining projects that explore and implement STEAM/STEM topics. Ensuring that adequate resources—such as funding, materials, and technical support—are consistently available is essential for the long-term success and impact of these initiatives. Limited financial resources can constrain the ability to maintain project activities, invest in necessary tools and technologies, and support ongoing operations. Additionally, access to high-quality educational materials and up-to-date technological resources is vital for delivering effective and engaging STEAM/STEM experiences. Without a stable supply of these resources, projects may struggle to uphold their objectives, keep up with advancements in the field, or scale their impact. Moreover, securing and managing resources often requires strategic planning and continuous effort, including building partnerships with stakeholders and seeking external funding opportunities. Effective resource management ensures that projects can adapt to evolving needs, address any emerging challenges, and sustain their efforts over time, ultimately contributing to a more resilient and impactful STEAM/STEM educational environment.
- **The limitation of Policy Recommendations:** While projects often prepare detailed policy recommendations to guide improvements in educational practices, these recommendations alone may not be sufficient to drive significant changes within the educational system. The complexity of altering national curricula requires more than just well-crafted suggestions; it demands substantial systemic changes, including policy reforms, resource allocation, and broad stakeholder engagement. Projects typically operate within specific constraints, such as limited scope, funding, and influence, which can restrict their capacity to effectuate widespread modifications in national educational policies. Consequently, even well-intentioned and thoroughly researched policy recommendations may fall short of achieving their intended impact. Without the support and integration of these recommendations into broader educational reforms, they may struggle to address systemic issues or reach the level of implementation required to transform national curricula. As a result, projects often face challenges in translating their recommendations into tangible and lasting changes across the educational system.
- **Financial Sustainability:** Ensuring long-term financial sustainability is a critical challenge for many projects. Projects often rely on initial grants or funding from sponsors, but maintaining financial support beyond the initial phase can be difficult. Developing a financial model that includes diverse funding sources—such as

partnerships with industry, philanthropic contributions, and government support—is essential for sustaining project activities. Additionally, projects must manage budgets carefully to ensure that funds are allocated effectively and used efficiently to achieve long-term goals.

- **Scalability and Adaptability:** Scaling a project to reach a broader audience while maintaining quality and effectiveness is another significant challenge. As projects grow, they must adapt their strategies and operations to accommodate a larger number of participants, locations, or regions. This may involve modifying the project's structure, expanding staff, and developing new partnerships. Ensuring that the project can adapt to different contexts and continue to meet the needs of diverse populations is crucial for its long-term success.
- **Evaluation and Impact Measurement**: Measuring and demonstrating the impact of STEAM/STEM projects is essential for proving their value and securing ongoing support. Developing robust evaluation frameworks and methodologies to assess the project's outcomes, effectiveness, and impact can be complex. Projects must collect and analyse data on various indicators, such as participant engagement, learning outcomes, and long-term benefits. Transparent reporting and evaluation help stakeholders understand the project's value and guide improvements for future iterations.
- **Technological Advancements:** Keeping up with rapid technological advancements in STE(A)M fields can be a challenge. Projects must continuously update their content and tools to stay relevant and effective. This involves investing in new technologies, adapting curriculum to reflect the latest developments, and ensuring that educators and participants are equipped with up-to-date resources. Staying current with technological trends helps maintain the project's relevance and effectiveness in a rapidly evolving field.
- **Legal and Regulatory Compliance:** Navigating legal and regulatory requirements related to education, data privacy, and funding can pose challenges for projects. Ensuring compliance with relevant laws and regulations is crucial for avoiding legal issues and maintaining the project's integrity. This includes understanding and adhering to regulations regarding data protection, intellectual property, and financial reporting. Legal and regulatory challenges require careful planning and consultation with experts to ensure that the project operates within the legal framework.

Addressing these additional challenges can further strengthen the project's sustainability and effectiveness, ensuring that it continues to make a meaningful impact in the STEAM/STEM education landscape.

5. RECOMMENDATIONS FOR FURTHER STEPS AND PROJECTS/INITIATIVES IN STEAM FROM INTERVIEW SUMMARIES

Empowering individuals of both genders, especially girls and young women, in STEAM fields (based on interview summaries) is not just a goal but a necessity. Despite significant efforts already made in this direction, barriers persist in their full participation and implementation in schools and Higher Education Institutions (HEIs), hindering success in these critical areas of study.

This chapter provides concrete recommendations for future projects aimed at breaking down these barriers and providing robust support for girls and young women in STEAM, as well as for all genders. These recommendations are based on insights gathered from interviews with experts and representatives from various projects and initiatives, emphasising inclusivity, practical experience, and systemic change but also literature review on the gender aspects of STE(A)M education.

To develop effective recommendations for educational Programmes targeting girls and all genders at primary and secondary levels, a multi-step methodology was employed:

- **Literature Review:** A thorough review of academic journals, educational reports, and project documentation from various STE(A)M initiatives was conducted to identify existing challenges and successful strategies, particularly in promoting gender inclusivity (Chapter 5).
- **Programme Analysis:** Current educational Programmes were analysed, focusing on both gender-specific and general approaches (Chapter 2, D2.1.) and D2.2. This included examining project reports, participant feedback, and outcomes to identify best practices and areas for improvement (D2.2).
- **Stakeholder Consultations:** Educators, programme coordinators, and participants were consulted to gather qualitative data on the effectiveness of various strategies and to identify gaps in current practices (Chapter 3).

The following recommendations aim to create supportive and effective STE(A)M education Programmes that encourage all students, particularly girls, to pursue and excel in STE(A)M fields. By addressing both gender-specific and general challenges, educational Programmes can foster a more inclusive and engaging learning environment for everyone.

5.1 RECOMMENDATIONS FOR EDUCATIONAL PROGRAMMES TARGETING GIRLS AT THE PRIMARY, AND SECONDARY LEVEL

Empowering girls and young women in STEAM fields remains a crucial goal. Despite progress, significant barriers persist, limiting their participation and success in these areas.

- **Promote inclusivity and diversity:** Educational Programmes should prioritise creating an inclusive environment that actively encourages girls to participate in STEM/STEAM activities. This can be achieved by addressing gender stereotypes through curriculum content, teacher training, and classroom practices. The Robotics Academy's and Girls' summer camp provides a safe space for girls to engage in STEM activities, which is crucial for fostering interest without the competitive environment often dominated by boys. Promoting inclusivity and diversity in educational programs is essential for ensuring that all students, particularly girls, feel encouraged and supported in participating in STE(A)M activities. Creating an inclusive environment involves a multifaceted approach that addresses both systemic and individual barriers. To effectively foster interest and engagement

among girls, educational programs should actively work to dismantle gender stereotypes through various channels. One critical aspect is integrating gender-sensitive content into the curriculum that challenges traditional stereotypes and showcases diverse role models in STE(A)M fields. By incorporating stories and examples of women and other underrepresented groups who have made significant contributions to these areas, educational programs can inspire students and provide relatable figures who defy conventional gender norms. This approach helps to broaden students' perceptions of who can succeed in STE(A)M fields and encourages them to envision themselves in these roles. Teacher training is another vital component. Educators should be equipped with strategies to recognize and counteract biases that may unconsciously influence their teaching practices. Professional development programs can focus on fostering awareness of gender biases and implementing inclusive teaching methods that create a supportive learning environment for all students. Training can also include techniques for encouraging girls to take on leadership roles and participate actively in STE(A)M activities. Classroom practices should be designed to promote collaboration and equal participation. Creating a supportive classroom culture where every student feels valued and confident to share their ideas is crucial. This can involve designing group activities that foster teamwork and ensure that all voices are heard, as well as implementing assessment methods that focus on individual growth rather than competition. Programs like the Robotics Academy and girls' summer camps exemplify effective strategies for promoting inclusivity. These initiatives provide safe and supportive spaces where girls can engage in STEM activities without the pressure of a competitive environment that is often dominated by boys. By offering a positive and non-intimidating atmosphere, these programs help to build confidence and interest in STE(A)M fields. They also offer opportunities for hands-on learning and collaboration, which are essential for deepening engagement and sparking a lasting passion for STE(A)M subjects. In summary, promoting inclusivity and diversity requires a comprehensive approach that includes curriculum development, teacher training, and supportive classroom practices. By addressing gender stereotypes and creating nurturing environments, educational programs can significantly enhance girls' participation in STE(A)M activities, ultimately leading to a more balanced and diverse representation in these critical fields.

- **Address Parental and Societal Influences:** Addressing parental and societal influences is crucial for creating a more inclusive environment in STE(A)M education. Programs aiming to encourage girls' participation in STE(A)M fields must actively engage both parents and communities to challenge and transform traditional perceptions that often deem STE(A)M careers as less suitable for girls. This involves a range of strategies designed to shift entrenched attitudes and foster a more supportive environment for girls interested in these fields. One effective approach is to organise workshops and informational sessions specifically targeted at parents and community members. These sessions can provide valuable insights into the importance of STE(A)M education and its benefits for all students, regardless of gender. By presenting data and real-world examples of how STE(A)M skills contribute to career success and innovation, these workshops can help parents understand the value of encouraging their daughters to explore STE(A)M opportunities. Additionally, showcasing successful female role models in STE(A)M is a powerful way to combat stereotypes and provide tangible examples of achievement. Bringing in women who have excelled in STE(A)M careers to share their experiences and discuss the challenges and rewards of their professions can inspire both girls and their families. These role models can help to demonstrate that STEM careers are not only attainable but also rewarding and impactful. Parental influence plays a significant role in shaping children's interests and career aspirations. Traditional expectations and societal norms often steer girls toward activities perceived as more appropriate for their gender, such as dance or music, while

STE(A)M fields are sometimes viewed as less suitable. To counteract this, programs should actively involve parents in the educational process by promoting STE(A)M - related activities and emphasising the importance of providing equal opportunities for their children. Engaging parents in the planning and execution of STE(A)M events, such as science fairs or coding workshops, can help them become more supportive of their daughters' STE(A)M pursuits. Community involvement also plays a vital role in shaping societal perceptions. Collaborating with local organisations, schools, and media outlets to promote STE(A)M events and highlight female achievements in these fields can help shift public attitudes. Public campaigns and community-based initiatives that celebrate women in STE(A)M can contribute to a broader cultural change, making STE(A)M education more appealing and accessible to girls. In summary, effectively addressing parental and societal influences requires a concerted effort to engage both parents and communities in reshaping perceptions of STE(A)M fields. By providing educational resources, showcasing role models, and involving families in STE(A)M activities, programs can help to challenge outdated stereotypes and create a more supportive environment that encourages girls to pursue and excel in STE(A)M disciplines.

- **Develop Gender-Sensitive Teaching Approaches:** Developing gender-sensitive teaching approaches is crucial for creating an inclusive STEM education environment where all students, especially girls, feel encouraged to participate and excel. Teachers play a pivotal role in shaping students' attitudes towards STEM fields, and therefore, it is essential that they are trained to recognize and counteract biases that might discourage girls from engaging with these subjects. Such biases can be subtle and may manifest in various ways, including the types of encouragement given, the assumptions made about students' abilities, or the resources and examples used in teaching. Training programs for educators should focus on raising awareness of these biases and providing practical strategies for overcoming them. This includes integrating gender-sensitive practices into the classroom, such as using inclusive language, avoiding stereotypes, and ensuring that classroom materials and activities reflect diverse contributions to STEM fields. For instance, curricula should highlight achievements of both male and female scientists and engineers, and resources should be selected to represent a broad spectrum of perspectives and experiences. Promoting collaborative learning is another key aspect of gender-sensitive teaching. Collaborative approaches not only enhance learning outcomes but also help to create an environment where all students feel valued and supported. Teachers can design group activities that encourage equal participation and foster teamwork, allowing students to build confidence and develop skills in a supportive setting. Collaborative projects also provide opportunities for students to assume different roles, including leadership positions, which can be particularly empowering for girls who might otherwise be less inclined to take on such roles. Offering diverse role models is vital for inspiring students and helping them envision themselves in STEM careers. Teachers should actively seek out and present stories of successful women and underrepresented individuals in STEM fields. By doing so, they can provide students with relatable examples of what is possible and challenge the stereotypes that often pervade these disciplines. Role models can come from various backgrounds and experiences, demonstrating that success in STEM is attainable for everyone. Encouraging girls to take leadership roles in STEM projects is also crucial. Teachers should create opportunities for girls to lead or take significant roles in group projects, presentations, and other activities. This not only helps to build their confidence but also ensures that they have the chance to develop and showcase their skills. Leadership roles can help students build resilience, problem-solving abilities, and a sense of ownership over their learning. The Robotics Academy exemplifies the importance of teacher training in effecting positive change within STEM education. By focusing on changing existing attitudes and promoting inclusivity, the Academy helps educators implement practices that support gender equity and foster an

environment where all students can thrive. Comprehensive training programs that address these aspects can significantly contribute to closing the gender gap in STEM fields and ensuring that every student has the opportunity to succeed. In summary, developing gender-sensitive teaching approaches involves comprehensive training for educators, promoting collaborative learning, offering diverse role models, and encouraging leadership opportunities for girls. By addressing these areas, educational programs can create a more inclusive and supportive environment that fosters greater participation and achievement in STEM disciplines.

- **Create Tailored Programmes and Activities:** Creating tailored programs and activities is essential for effectively engaging girls in STE(A)M education by aligning with their interests and learning styles. Developing initiatives specifically designed to appeal to girls requires a thoughtful approach that considers their preferences and needs. This includes designing activities that are not only educational but also engaging and relevant to their experiences. One effective strategy is to integrate creative and collaborative projects into STE(A)M programs. By incorporating elements that appeal to a diverse range of interests, educational programs can make STE(A)M subjects more accessible and enjoyable. For instance, projects that combine STE(A)M with arts or design, such as creating custom LEGO bracelets, allow students to explore engineering concepts in a way that resonates with their personal interests. These activities can bridge the gap between abstract STE(A)M concepts and tangible, creative outcomes, making learning more relatable and motivating. In addition to creative projects, it is important to include collaborative elements that foster teamwork and peer interaction. Collaborative activities not only enhance problem-solving skills and communication but also create a supportive environment where students can share ideas and learn from each other. This approach helps build a sense of community and belonging, which is particularly important for encouraging ongoing participation in STE(A)M fields. Tailoring programs to highlight the real-world applications of STE(A)M knowledge is another key aspect. By demonstrating how STE(A)M skills are used in various professions and everyday life, educational programs can show students the practical value and impact of their learning. This might involve project-based learning opportunities where students work on real-world problems or collaborate with professionals in STE(A)M fields. Such experiences can help students see the relevance of their education and inspire them to pursue STE(A)M careers. For example, the girls' summer camp at the Robotics Academy incorporates activities like LEGO bracelets, which are specifically designed to reflect the interests of girls. These activities provide a hands-on way for participants to engage with engineering principles while expressing their creativity. By aligning the activities with students' interests, the camp effectively captures their attention and enthusiasm, making STEM learning a more enjoyable and fulfilling experience. Moreover, feedback from participants can be invaluable in shaping and refining these programs. By actively seeking input from girls about what they find engaging and meaningful, educators can continuously adapt and improve the offerings to better meet their needs and preferences. In summary, creating tailored programs and activities involves developing initiatives that align with girls' interests and learning styles, incorporating creative and collaborative projects, and highlighting real-world applications of STE(A)M knowledge. By adopting these strategies, educational programs can provide a more engaging and supportive environment that encourages girls to explore and excel in STE(A)M disciplines.

5.2 RECOMMENDATIONS FOR EDUCATIONAL PROGRAMMES TARGETING ALL GENDERS AT PRIMARY AND SECONDARY LEVEL

Empowering all genders students in STEAM is crucial for fostering a diverse and inclusive environment that encourages innovation and excellence. This chapter provides recommendations for new projects aimed at promoting STEAM education and careers among all students, emphasising inclusion, practical experience, and systemic support.

- **Foster Early Exposure to STEM:** Fostering early exposure to STEM is a fundamental strategy for building a solid foundation and nurturing a lasting interest in science, technology, engineering, and mathematics among young students. Introducing STEM concepts at an early age through engaging and hands-on activities helps children develop critical thinking skills, problem-solving abilities, and a curiosity about how the world works. Early exposure to STEM not only sparks interest but also provides a crucial head start in developing the competencies needed for future success in these fields. Incorporating STEM concepts into early childhood education involves designing activities that are both educational and enjoyable for young learners. This can include interactive experiments, building projects, coding games, and exploratory activities that align with children's developmental stages and interests. For instance, simple engineering challenges like building structures with blocks or exploring basic robotics can captivate young minds and lay the groundwork for more complex STEM learning later on. These activities are designed to be age-appropriate, encouraging children to experiment, ask questions, and discover solutions in a supportive and stimulating environment. A key benefit of early exposure to STEM is that it helps to identify and nurture individual interests and talents from a young age. When children are introduced to a variety of STEM-related activities, they have the opportunity to explore different aspects of these fields and discover what resonates with them. This early exploration can help them develop a sense of accomplishment and confidence in their abilities, fostering a positive attitude toward STEM subjects. By creating opportunities for all students to engage with STEM, educational programs can address diverse interests and learning styles, ensuring that every child has the chance to find their passion. Moreover, early exposure to STEM can contribute to reducing gender disparities and promoting inclusivity. By offering a range of activities that appeal to all students, including those from underrepresented groups, educational programs can help to counteract stereotypes and encourage a more diverse group of students to pursue STEM fields. Programs that integrate STEM into everyday learning experiences and celebrate the achievements of all students can help to build a more equitable and inclusive educational environment. The benefits of early STEM exposure extend beyond the classroom. Engaging activities that involve families and communities can enhance learning experiences and create a supportive network for young learners. Family workshops, community science fairs, and collaborative projects can provide additional opportunities for children to explore STEM concepts and inspire continued interest and engagement. These activities also help to build a culture of support and enthusiasm for STEM within families and communities, reinforcing the importance of these fields. In summary, fostering early exposure to STEM through engaging and hands-on activities is essential for building a strong foundation and sustaining interest in these fields. By introducing STEM concepts in a fun and accessible way, educational programs can help children discover their interests, develop critical skills, and cultivate a lifelong passion for science, technology, engineering, and mathematics. Early engagement not only benefits individual learners but also contributes to a more inclusive and diverse STEM community.
- **Encourage a Collaborative Learning Environment:** Encouraging a collaborative learning environment is crucial for fostering inclusivity and breaking down gender

barriers in education. By promoting a setting where students work together on projects, educators can help create a sense of community and shared learning that benefits all participants. Collaborative learning environments not only enhance educational outcomes but also contribute to the development of important soft skills such as teamwork, communication, and problem-solving. In a collaborative learning environment, students are given opportunities to engage in group activities that require them to work together towards common goals. This approach helps dismantle traditional gender roles by placing a strong emphasis on collective effort and mutual support, rather than individual competition. It creates a space where all students, regardless of gender, can contribute their strengths and learn from one another in an equitable manner. For example, group projects, brainstorming sessions, and peer reviews allow students to collaborate, share ideas, and build upon each other's work, fostering an atmosphere of respect and cooperation. A key benefit of this approach is the development of a sense of community among students. When students work together, they form bonds and establish a supportive network that can enhance their overall learning experience. This communal environment helps to reduce feelings of isolation and encourages students to feel more connected to their peers and their learning process. It also provides opportunities for students to learn from diverse perspectives, which can enrich their understanding and appreciation of different viewpoints. The Robotics Academy exemplifies the value of a collaborative learning environment through its emphasis on hands-on experiences and quality engagement. By incorporating practical, project-based activities, the Academy creates an environment where students can actively participate and apply their knowledge in meaningful ways. This approach not only supports technical skill development but also promotes the growth of essential soft skills. Activities that require teamwork, such as building and programming robots, allow students to collaborate, communicate, and problem-solve together, thus reinforcing the importance of working effectively as a team. Furthermore, fostering an inclusive atmosphere is integral to the success of collaborative learning. This involves creating a space where all students feel valued and supported, and where their contributions are recognized and respected. An inclusive environment helps to ensure that no student feels marginalised or excluded based on their gender, background, or abilities. By actively promoting inclusivity and addressing any biases that may arise, educators can help create a learning environment that is welcoming and equitable for all students. In summary, promoting a collaborative learning environment is essential for breaking down gender barriers and fostering a sense of community in educational settings. By encouraging students to work together on projects, educators can enhance both technical and soft skills while creating an inclusive and supportive atmosphere. The Robotics Academy's focus on hands-on, collaborative experiences serves as a model for how such environments can be effectively implemented to support student growth and learning.

- **Integrate STEM with Other Disciplines**: Integrating STEAM with other disciplines is a vital strategy for creating a holistic educational approach that bridges the gap between STEM subjects and the arts and humanities. By combining STEM education with creative fields, educators can foster a more comprehensive learning experience that appeals to a diverse range of students and highlights the interconnectedness of various fields of knowledge. A STE(A)M approach incorporates arts and humanities into traditional STEM curricula, enriching the learning experience and making it more relevant to students' interests and real-world applications. This integration allows students to explore STEM concepts through creative and expressive activities, such as designing and building projects that blend engineering with artistic design or analysing historical contexts alongside scientific advancements. By doing so, students can see the broader applications of STEM knowledge and how it intersects with other areas of learning. One of the key benefits of integrating STE(A)M with

other disciplines is that it makes STEM subjects more accessible and engaging for students who might not otherwise be drawn to them. For instance, incorporating elements of design, storytelling, or cultural analysis into STEM projects can help students connect with the material in a way that resonates with their individual interests and talents. This approach not only enhances student motivation but also fosters a deeper understanding of STEM concepts by contextualising them within a broader framework. The OTTER project exemplifies the effectiveness of this approach by incorporating practical, hands-on learning experiences that extend beyond the traditional classroom setting. Through activities that blend STEM with the arts and humanities, the OTTER project provides students with opportunities to engage in real-world problem-solving and creative expression. For example, students might work on projects that require them to design and create physical models while considering aesthetic elements or cultural significance. Such interdisciplinary projects help students appreciate the relevance of STEM knowledge in various contexts and encourage them to approach problems from multiple perspectives. Furthermore, integrating STE(A)M with other disciplines fosters the development of a wide range of skills, including critical thinking, creativity, and collaboration. By engaging in projects that require both technical and artistic skills, students learn to think holistically and apply their knowledge in innovative ways. This multidisciplinary approach also prepares students for a future where the ability to integrate different areas of expertise is increasingly valuable in many careers. In summary, integrating STEAM with other disciplines provides a holistic educational approach that enhances the accessibility and appeal of STEM subjects. By combining STEM education with the arts and humanities, educators can create a more engaging and relevant learning experience for students. The OTTER project's emphasis on practical, hands-on learning experiences outside the traditional classroom highlights the importance of connecting STEM with other educational activities, demonstrating how interdisciplinary approaches can enrich students' understanding and foster a more comprehensive skill set. Integrate STEM education with arts and humanities to create a holistic STEAM approach. This makes STEM subjects more accessible and appealing to a broader range of students. The OTTER project integrates practical hands-on learning experiences outside the traditional classroom setting, emphasising the importance of connecting STEM with other educational activities.

- **Adapt Programmes to Local Contexts:** Adapting programs to local contexts is crucial for ensuring their effectiveness and relevance. Recognizing and accommodating the unique educational, cultural, and social factors specific to different regions allows programs to address the distinct needs and preferences of various communities. This tailored approach not only enhances the impact of educational initiatives but also fosters greater engagement and participation among local populations. Understanding regional differences involves a thorough analysis of local educational systems, cultural values, and societal norms. For instance, educational priorities and resources can vary significantly between urban and rural areas, as well as between different countries or regions. Adapting programs requires an awareness of these variations and a willingness to modify content and delivery methods accordingly. This might involve adjusting the curriculum to align with local educational standards, incorporating culturally relevant examples, or addressing specific regional challenges that affect students' learning experiences. In addition to educational needs, cultural values play a critical role in shaping how programs are received and perceived. Different communities have varying attitudes toward education, particularly in fields like STEM. For example, in some cultures, there may be a strong emphasis on traditional subjects or gender-specific roles, which can influence students' interest and participation in STEM activities. Adapting programs to reflect and respect these cultural values can help bridge gaps and promote inclusivity. This may include integrating local customs, traditions, and languages into

the program content to make it more relatable and engaging for participants. The Robotics Academy provides a compelling example of how adapting programs to local contexts can lead to more successful outcomes. By understanding that attitudes, values, and educational needs vary across different locations, the Academy tailors its programs to meet the specific requirements of each community it serves. This involves collaborating with local educators, parents, and stakeholders to gather insights and feedback that inform program design and implementation. For instance, the Academy might adjust its teaching methods, resources, or activities to better align with local expectations and learning preferences. Moreover, adapting programs to local contexts can also involve addressing logistical and infrastructural challenges. This may include adapting to varying levels of technological access, differing classroom environments, or specific regional constraints that impact program delivery. By taking these factors into account, programs can be designed to be more practical and feasible within the given context, ensuring that they effectively address the needs of the target audience. In summary, adapting programs to local contexts involves recognizing and responding to the educational, cultural, and social factors unique to each region. By tailoring programs to meet these specific needs, educators can enhance their effectiveness, foster greater engagement, and create a more inclusive learning environment. The Robotics Academy exemplifies this approach by adjusting its programs to reflect local attitudes and values, demonstrating the importance of context-sensitive design in achieving successful educational outcomes.

- **Provide Continuous Professional Development for Teachers:** Providing continuous professional development for teachers is essential to maintaining and enhancing the quality of STEAM education. As educational practices, technologies, and methodologies evolve, it is crucial for educators to stay current with the latest advancements and strategies in teaching STEAM subjects. Ongoing professional development ensures that teachers are well-equipped to offer the most effective and engaging learning experiences for their students. Professional development for teachers encompasses a range of activities and opportunities designed to improve their skills and knowledge. This can include workshops, seminars, online courses, and collaborative learning communities that focus on emerging trends and best practices in STEM education. By participating in these programs, teachers can gain new insights into innovative teaching methods, learn how to integrate new technologies into their classrooms, and develop strategies to address diverse learning needs. Continuous learning helps educators adapt to changes in the curriculum, instructional tools, and educational standards, ensuring that they can provide high-quality instruction that meets the evolving demands of STEM fields. The Road-STEAMer project serves as a prime example of the importance of teacher training and professional development in STE(A)M education. This project emphasises the need for sustained investment in teacher development to enhance the effectiveness of STE(A)M programs. Through its initiatives, Road-STEAMer provides teachers with access to specialised training that focuses on cutting-edge STE(A)M teaching strategies and methodologies. This includes practical workshops on integrating STE(A)M concepts into classroom activities, using educational technologies, and fostering a collaborative learning environment. By equipping teachers with these skills, the project aims to improve the overall quality of STE(A)M education and support student success in these fields. In addition to improving instructional practices, continuous professional development fosters a culture of lifelong learning among educators. It encourages teachers to remain curious, innovative, and committed to their professional growth. This, in turn, has a positive impact on their students, who benefit from a dynamic and engaging learning environment. Teachers who are actively involved in their own professional development are more likely to inspire their students, model a love of learning, and create opportunities for students to explore STE(A)M subjects in meaningful ways.

Furthermore, ongoing professional development can help address challenges and gaps in STE(A)M education. For example, teachers may encounter difficulties in implementing new technologies or adapting to changes in the curriculum. Professional development programs can provide targeted support and resources to help educators overcome these challenges and effectively integrate new tools and approaches into their teaching practices. In summary, providing continuous professional development for teachers is crucial for enhancing the quality of STE(A)M education. By offering ongoing training and learning opportunities, educators can stay up-to-date with the latest teaching strategies and methodologies, ensuring that they deliver the best possible learning experiences for their students. The Road-STEAMer project highlights the importance of investing in teacher development to improve STE(A)M education and support student achievement. Through such initiatives, educators are better equipped to adapt to evolving educational demands, foster a culture of innovation, and ultimately contribute to the success of their students in STE(A)M fields.

- **Engage Communities and Parents:** Engaging communities and parents in the educational process is crucial for creating a supportive and encouraging environment that fosters students' interest in STEAM fields. Actively involving families and local organisations can play a significant role in shaping positive attitudes towards STEAM careers and challenging traditional gender stereotypes. By forming strong partnerships with parents and community stakeholders, educational programs can build a network of support that enhances students' educational experiences and inspires them to pursue careers in STEAM. One effective way to engage parents and communities is through organised workshops and informational sessions that highlight the importance of STEAM education and its benefits. These sessions can provide parents with valuable insights into the opportunities available in STEAM fields and how they can support their children's interests and ambitions. For instance, workshops that focus on the skills needed for STEAM careers and how to foster these skills at home can empower parents to become active participants in their children's learning journey. Collaborating with local organisations, businesses, and community groups can also enrich the educational experience by providing real-world connections and resources. Partnerships with local companies can lead to internships, mentorship programs, and hands-on projects that give students a glimpse into STEAM careers and professional environments. Community groups can offer support through volunteer opportunities, after-school programs, and events that celebrate STEAM achievements and promote the importance of these fields. The Hypatia project exemplifies the positive impact of community and parental engagement on creating inclusive educational experiences. By working closely with families and local stakeholders, the Hypatia project has successfully fostered an environment where young girls are encouraged to explore and excel in STEAM disciplines. The project's approach includes involving parents in discussions about gender stereotypes, organising community events that showcase successful female role models, and creating opportunities for girls to engage with STEAM activities outside the classroom. In addition to these efforts, integrating feedback from parents and community members can help tailor educational programs to better meet the needs and expectations of the local context. This ongoing dialogue ensures that programs remain relevant and responsive to the interests and concerns of families, further strengthening their support for STEAM education. Engaging communities and parents also involves addressing any cultural or societal barriers that may affect students' perceptions of STEAM careers. By fostering open communication and collaboration, educational programs can work towards dismantling misconceptions and creating a more inclusive and supportive environment for all students. This collaborative approach not only enhances students' educational experiences but also contributes to building a more diverse and equitable STEAM workforce. In summary, actively involving communities and parents in the educational process is

essential for creating a supportive environment that encourages students to pursue STEAM careers. By fostering partnerships with families and local organisations, educational programs can challenge traditional stereotypes, promote positive attitudes, and provide valuable resources and opportunities for students. The Hypatia project demonstrates how effective community and parental engagement can shape inclusive educational experiences and inspire young girls to excel in STEAM fields.

CONCLUSION

This deliverable has thoroughly examined the current state of gender inclusivity in STEAM education through a comprehensive review of previous and ongoing initiatives and projects across Europe. The research highlighted persistent gender disparities in STEAM fields, underscoring the need for continued efforts to break down institutional and societal barriers. The findings emphasise the importance of tailored educational programs that promote inclusivity and diversity, targeting young girls at primary and secondary levels to foster early interest and sustained engagement in STEAM disciplines. Additionally, the significance of teacher training, parental involvement, and community engagement has been identified as critical factors in shaping positive perceptions and experiences for girls in these fields.

Key findings underscore that gender disparities remain a significant challenge in STEAM education. Girls and women are underrepresented in these fields due to societal stereotypes, lack of female role models, and gender biases in educational and professional environments. Despite various efforts to promote gender equality, these barriers continue to impede the participation of women and girls in STEAM disciplines. Initiatives such as FemSTEM and MENTORASTEAM have demonstrated that targeted interventions can improve recruitment, retention, and progression of women in STEAM. However, challenges persist, including engaging women in long-term activities and addressing the specific needs of women with migration backgrounds.

A critical insight from the research is the necessity of tailored educational programs that promote inclusivity and diversity. Gender-sensitive teaching approaches, which consider the unique needs and interests of girls, can significantly enhance their participation. For instance, the Hypatia project's approach of involving adolescents in designing activities proved effective in promoting gender diversity in science careers. Community and parental involvement are crucial in shaping positive perceptions and experiences for girls in STEAM fields. Programs that engage parents and communities in the educational process can help dismantle stereotypes and encourage girls to pursue STEAM careers. The Hypatia project successfully influenced societal discourse on gender roles through partnerships with government agencies and other stakeholders.

Promoting collaborative and inclusive learning environments helps break down gender barriers and fosters a sense of community. Initiatives like the Robotics Academy advocate for quality engagement through hands-on experiences, supporting the development of both technical knowledge and soft skills. Integrating STEAM education with arts and humanities can create a more holistic and appealing approach, making these subjects accessible to a broader range of students. Projects like OTTER emphasise the importance of practical, hands-on learning experiences outside traditional classroom settings.

In upcoming projects, it is important to include key strategies to improve gender equality in STEAM education:

- Educators need training to identify and address biases that could hinder girls from engaging in STEAM fields. This involves encouraging collaborative learning, providing a variety of role models, and urging girls to assume leadership positions in STEAM projects.
- Design customized initiatives and events:
    - Develop activities tailored to engage with girls interests and learning methods. This may include incorporating collaborative and innovative initiatives that showcase the practical uses of STEAM knowledge.
    - Involve parents and communities in encouraging girls to pursue STEAM careers by challenging traditional beliefs. This may involve workshops, information sessions, and featuring successful female role models in STE(A)M.
    - Deliver consistent teacher development: Provide continuous training for educators to remain current on STEAM instructional methods. This

guarantees that teachers are prepared to offer top-notch learning opportunities for every student.

- Encourage early engagement with STEAM: Introduce STEAM concepts to young children through interactive and practical tasks.
- Being exposed to STEAM fields at a young age builds a strong foundation and long-term interest in those areas.
- Emphasize practical uses: Linking theory to practical issues can enhance student engagement in STEAM subjects. Initiatives such as the OTTER project, which prioritize practical learning experiences, have successfully captured students' attention.

The STREAM IT project serves as a crucial step towards achieving gender inclusivity in STEAM education. The insights and recommendations from this report aim to inform and inspire stakeholders at various levels to implement effective strategies that will empower girls and young women to pursue and succeed in STEAM careers. By addressing the persistent gender disparities and creating more inclusive educational environments, we can contribute to a more diverse and innovative workforce. The comprehensive analysis provided in this report underscores the importance of continuous and collaborative efforts to achieve gender equality in STEAM education. The recommendations offered serve as a roadmap for future initiatives, ensuring that all students, regardless of gender, have the opportunity to excel in STEAM disciplines.

In summary, while significant strides have been made in promoting gender inclusivity in STEAM education, ongoing efforts and innovative strategies are essential to sustain this progress. Future projects must continue to break down institutional and societal barriers, engage communities and parents, and provide tailored educational programs that inspire and support girls and young women in STEAM disciplines. Through collective efforts, we can achieve a more equitable and inclusive future in STEAM. The journey towards gender equality in STEAM is ongoing, and it is through persistent and innovative efforts that we will create a more inclusive and equitable future for all.

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ANNEX 1- EN_INFORMED CONSENT FORM

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***STREAM IT* Consent Form for Participation in Interview Research**

I, _____ [name of participant], volunteer to participate in the qualitative research conducted by _____ [name of researcher] representing _____ [name of institute]. The study is being carried out within the *STREAM IT* project funded through the Horizon scheme (Contract no. **101131843**).

Scope, procedure, and data analysis

I understand that the *STREAM IT* project aims at improving women's opportunities to embark on a career in the STEAM fields and to do so, will organise programmes to facilitate their access and chances. This research is a baseline study for the project and its objective is to document the situation of women studying in a STEAM field and living in _____ [name of country].

I understand that I was selected to be one of the interviewees for this qualitative research based on my social and professional characteristics (occupation, expertise, and competencies).

The interview lasts for approximately 1–1.5 hours and it will be based on the interview guide prepared by the researcher.

My participation is crucial to reaching the scientific objectives of the research; nevertheless, my participation is completely voluntary and anonymous. The texts resulting from this interview will only be used for analytic purposes and even if parts from the interview are quoted in the research report, their complete confidentiality will be safeguarded. The data will be processed only by authorised parties involved in the project, in compliance with current legislation, and none of my data will ever be passed to third parties. Under the guarantee that no record or information that may be collected and/or shared within the project could undermine a) my integrity or b) confidentiality matters, through this consent form I authorise the *STREAM IT* consortium partners to collect and use the data I provide.

I have read and understand the explanation provided to me. I have had all my questions answered satisfactorily, and I voluntarily agree to participate in this study.

_____ _____

Interviewee Researcher

Date and location

_____

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Additional data handling specifications

Storage period of personal data: Duration of the contract (+2 years).

Transfer outside the (European Economic Area) EEA: Under the General Data Protection Regulation (GDPR), personal data may only be passed on to parties outside the EEA if an appropriate level is guaranteed for the protection of the personal data or if a specific deviation applies. We may pass on personal data to a party outside the EEA if this is necessary for the execution of the contract for the provision of innovation or financing consultancy services.

Privacy rights of participants: You can send a request for inspection, correction, restriction, resistance, transferability of data, deletion of **your personal data,** or withdrawal of previously given permission via the contact details below. You will receive further notice from us within four weeks of receipt of your request.

To ensure that we provide the relevant personal information to the right person based on your request, we can ask you to provide a copy of a valid passport, driver's license, or identity card for verification purposes. We will only process requests that relate to your own personal data. For all these questions, please contact us by e-mail at ***project mail address.***

ANNEX 2 – PRESENTATION OF THE INTERVIEW SUMMARIES WITH REPRESENTATIVES OF THE PROJECTS AND INITIATIVES

PRESENTATION OF THE PROJECT/INITIATIVES WHOSE OWNERS WERE INTERVIEWED AND THAT SPECIFICALLY TARGET GIRLS/WOMEN

In this chapter, we delve into initiatives and projects aimed at promoting STE(A)M education and fostering inclusivity, with a particular focus on engaging girls and women. Each initiative represents a unique approach to addressing the gender gap in STE(A)M fields, emphasising early exposure, supportive environments, and equal opportunities. The projects and initiatives covered include FeSTEM, Hypatia project, International Girls in ICT Day, Inventoras project, SEER project, SGA Empowers, The Girls Go Circular program, Women in Science, and ZEF camp.

In the following sections, we explore each initiative in detail, examining its main motives/inspirations, project descriptions, key outcomes in supporting and empowering women and girls in STEAM, and stakeholder involvement. These sections provide valuable insights into the multifaceted efforts to promote STE(A)M education and foster inclusivity, particularly for girls and women.

FeSTEM project

Description and main activities, results, challenges, recommendations and motivation

The project creates an inclusive environment. This project seeks to highlight and overcome gender disparities, inspire future generations, and provide female role models in these fields.
The FeSTEM project, coordinated by the CUT (Cyprus University of Technology), stems from the significant under-representation of women in STEM and the clean energy sectors. The FeSTEM project aimed to empower young girls and women to get involved and stay active in STEM by addressing the challenges they face and promoting best practices for their continued participation.
The FeSTEM project successfully created a toolkit for higher education to engage more women in STEM and promote gender-inclusive practices in classrooms. It established the FeSTEM network, an online community connecting students with mentors, providing female role models, and facilitating peer-to-peer learning. The project received positive feedback for its inclusive Activities and collaboration across genders and countries. The FemPower project built on FeSTEM's successes by developing a gender-sensitive toolkit for the clean energy sector and organising CUT international workshops and summer schools. It also launched a MOOC (Massive Open Online Course) to educate students on gender inequalities and the clean energy transition. Despite initial challenges, including the COVID-19 pandemic, both projects significantly contributed to empowering women and promoting gender equality in STEM and clean energy fields.
The main stakeholders for the FeSTEM and FemPower projects include CUT - The institution where the projects are based, providing support and resources for their implementation. E.C. Research Associate at CUT and coordinator of the projects, overseeing their development and execution.
Women Researchers and Students in STEM: Primary beneficiaries receiving support, empowerment, and engagement opportunities.
Educators and Instructors: Implementing gender-inclusive practices and utilising project toolkits in their teaching.
Policy Makers: Shaping policies on gender equality and STEM education, and potentially applying project insights on a larger scale.
Industry Professionals: Especially in clean energy, benefiting from gender-sensitive approaches introduced by the FemPower project.
International Partners: Engaging in workshops and summer schools, and sharing best practices for gender equality and STEM education across countries.
The motivation for the FeSTEM project focuses on gender equality in the clean energy transition sector, developing a gender-sensitive toolkit to engage students and support instructors in creating a more inclusive and diverse learning environment.

FemSTEM and MENTORASTEAM

Description and main activities, results, challenges, recommendations and motivation

These initiatives are focused on improving the recruitment, retention, and progression of women in STEM fields. While FemSTEM addresses these aspects broadly, MENTORASTEAM specifically targets enhancing the employability of highly skilled migrant and second-generation women in STEAM.

The FemSTEM project has achieved notable results, including the development of an e-coaching programme on soft skills for women in STEM, a collection of testimonials from women in STEM, a career launchpad with useful links, and two cycles of Coaching Circles. Similarly, MENTORASTEAM has provided training on soft skills for women with a migration background, created a policy framework guide, and developed a MOOC for mentoring and training, with a facilitator guide for one-to-one and group mentoring.

Despite these successes, the projects faced challenges in recruiting women in STEM, who are a minority and difficult to engage in long-term activities. FemSTEM overcame this by creatively scheduling activities on Zoom during lunch breaks, after hours, or on weekends. MENTORASTEAM faced additional difficulties due to the target group's migration background.

Support for these projects came from various stakeholders, including the European Association for Women in STEM, Women's Engineering Society (WES) UK, Gender Summit, and the British Council in Peru and Mexico for projects focused on first, second, and 1.5 generation women.

The interviewee recommended that future projects should employ more creative recruitment and retention strategies, possibly with incentives, and establish support communities to continue post-funding. Additionally, she suggested co-creating materials with women in STEM/STEAM to ensure relevance and effectiveness.

In conclusion, the interviewee highly recommended both projects as examples of good practice. They provided valuable tools, research, coaching programmes, and free courses that were well-received. Participants formed sustainable support groups, and the projects led to several unintended positive outcomes, such as journal publications and lasting connections among participants.

Hypatia project

Description and main activities, results, challenges, recommendations and motivation

The Hypatia project, coordinated by the Nemo Science Museum in Amsterdam, aimed to address the persistent gender gap in science by developing strategies to engage girls in science-related Activities. Recognizing that targeting all youth was more effective than focusing solely on girls, the project shifted its approach to reach a broader demographic. By involving adolescents aged 12 to 18 in designing Activities and creating a teacher training guide, the project sought to influence individual beliefs, interactions, organisational environments, and societal influences. This comprehensive approach aimed to promote gender diversity in science careers and encourage girls' interest in science by challenging stereotypes and biases within schools, families, and society.

The Hypatia project primarily focused on research to understand how to effectively engage girls in science-related Activities. They found that targeting the entire group of youngsters was more effective than solely focusing on girls due to the diverse interests among them. Collaborating with a small group of students, they developed a campaign that included various materials tailored to the interests of the target audience. The main target group was adolescents aged 12 to 18, and they were actively involved in designing the Activities. Additionally, they created a teacher training guide to engage both teachers and parents, recognizing the importance of influencing the environment at school and societal levels to encourage girls' interest in science. The Hypatia project adopted a four-level engagement model, focusing on individual beliefs, interactions, organisational environments, and societal influences, which informed the development of the teacher's guide to promote gender diversity in science careers.

The Hypatia project successfully developed strategies to engage a broader youth demographic in science, resulting in several key outcomes. It created tailored educational materials and a teacher training guide to promote gender diversity in science careers. The project also established local action plans in multiple countries to sustain its impact, focusing on teacher training and student involvement. Hypatia effectively changed mindsets within schools and influenced societal discourse on gender roles in science through partnerships with government agencies and other stakeholders.

In each country, diverse stakeholders from various target groups were engaged in the project. These included students, parents, teachers, representatives from the industry, government officials, and in the case of the Netherlands, entities like the Ministry of Defence and museums.

International Girls in ICT Day project

Description and main activities, results, challenges, recommendations and motivation

The motivation for the International Girls in ICT Day event, organised by the Association of Business Women of Serbia (ABW Serbia), is to empower young girls in choosing their future careers by encouraging them to pursue their interests and talents without succumbing to gender stereotypes. Celebrated annually on the fourth Thursday of April, the event aims to make the ICT and entrepreneurial sectors more accessible to girls, addressing their underrepresentation in these fields.

International Girls in ICT Day project engages key players in girls' environments: families, schools, teachers, future employers, the media, and especially the youth, to work on overcoming gender-specific stereotypes in the world of work and professions. All Activities aim to develop an interest in entrepreneurship among young people as an option for future employment. Therefore, the project extensively involves working with the public, raising awareness, and educating all involved stakeholders. Additionally, this project is directly aimed at supporting girls in their career choices, making the world of ICT and entrepreneurship more accessible to the underrepresented gender in business.

International Girls in ICT Day was implemented by the Association of Business Women of Serbia (ABW Serbia) for 14 years. The International Girls in ICT Day, established by the United Nations, is celebrated on the fourth Thursday of April each year under the auspices of the International Telecommunication Union (ITU). The International Girls in ICT Day was celebrated on April 25th.

Over the past 14 years, the International Girls in ICT Day event organised by ABW Serbia has successfully engaged more than 11,000 final-year elementary school girls in various activities, including visits to ICT companies and women-owned businesses, and participation in the "Catch the Idea" competition. These initiatives have sparked significant interest among the girls, with 95% expressing a desire to emulate the women entrepreneurs and managers they met, and half aspiring to become directors like the entrepreneurs they visited. The project's visibility has increased, leading to more schools and girls wanting to participate each year, and a growing number of companies willing to host the girls. In 2023, visits were organised to 51 companies, representing a more than 50% increase from the previous year. The project has effectively raised awareness about the importance of including girls in ICT and inspired many to consider entrepreneurship as a viable career path.

This year, ABW Serbia realised the event/project through three different Activities:

- Catch the Idea Competition - All elementary schools in Serbia are invited to have their teams of final year female students (7th and 8th grade) present their ideas using modern communication methods, in the form of a one-minute video.
- Group Visits to ICT Companies and Companies Owned or Managed by Women - Final year female elementary school students visit selected companies (ICT sector or sectors where women are underrepresented, such as engineering, construction, mining, or where women hold leadership positions, include women-owned firms in the supply chain, or are owned by women). These visits were organised in-person during April and May in the respective locations of the schools and companies. Online visits were also arranged for schools unable to organise in-person visits.
- Final Event - The final event at the House of the National Assembly was attended by 250 girls from all over Serbia who participated in the event and were winners of the "Catch the Idea" competition, along with representatives from partners and institutions. Awards were given to the competition winners at this event.

Main supporters of the event include the National Assembly of the Republic of Serbia, the Ministry of Information and Telecommunications, the Ministry of Education, the Ministry of Science, Technological Development and Innovation, the Ministry of Economy, the

Ministry of Tourism and Youth, the Ministry of Public Administration and Local Self-Government, the Commissioner for the Protection of Equality, the International Telecommunication Union (ITU), A1, UN Women, EU SME Week, the Canadian-Serbian Business Association (CANSEE), Klett, Eurolog System, Blumen Group, Erste Bank, Generali Insurance, and Telekom.

Inventoras project

Description and main activities, results, challenges, recommendations and motivation

The motivation for the Inventoras project at the UPM is to highlight the innovative contributions of women inventors in STEAM fields, address the gender gap within these disciplines, and inspire future generations. By showcasing the work of women researchers who have patented their ideas through personalised interviews and strategic communication campaigns, the project aims to promote visibility and recognize the creativity and impact of women in science and technology.
The project sought to highlight the innovative contributions of women researchers by conducting 10 interviews with those who had patented their ideas. Five of these interviews were recorded and uploaded to the UPM YouTube channel, while the others were disseminated through social media platforms. The Inventoras project included a communication campaign spanning an entire academic year, strategically aligning with events such as Inventor's Day, the International Day of Women and Girls in Science, and other related occasions to maximise its impact and reach.
The Inventoras project at the UPM successfully increased visibility of women inventors by conducting and disseminating 10 interviews, with five uploaded to YouTube and others shared on social media. The project's strategic communication campaign led to a significant increase in outreach, with visits rising from 2,500 to 27,000. The initiative was well-received institutionally and positively impacted the recognition of women's contributions in STEAM fields. Despite initial challenges, the project effectively addressed the gender gap and inspired future generations.
The main stakeholders for the Inventoras project are: Universidad Politécnica de Madrid (UPM): The institution where the project is based, supporting and promoting the initiative. Women Researchers and Inventors at UPM: The primary subjects of the project, whose work and contributions are being highlighted. FECYT (Spanish Foundation for Science and Technology): The organisation that provided funding for the project. The University Community at UPM: Including students, faculty, and staff, who benefit from and contribute to the project's goals. Secondary School Girls: A key audience for the project's efforts to inspire future generations in STEAM fields. General Public and Online Audience: Engaged through social media, YouTube, and online advertising, increasing the project's reach and impact.

SEER project

Description and main activities, results, challenges, recommendations and motivation

The SEER project, coordinated by EUN Partnership AISBL Belgium and involving multiple partners like Indire Research Institute (Italy), aims to address persistent challenges in STEM education across Europe. Despite decades of funding and the evolution of educational approaches from STEM to STEAM, significant barriers remain, especially in terms of gender inclusion and overcoming biases that discourage girls from pursuing STEM subjects. The project's motivation stems from the need to compile existing knowledge, policies, and classroom practices into a comprehensive roadmap. This roadmap will guide educators in overcoming challenges such as teacher competencies, organisational issues, and alignment with future job skills while maintaining educational independence. By creating an Atlas of experiences and outcomes, the SEER project seeks to foster a more inclusive and effective STEM education system that addresses the diverse needs of students and educators across Europe.
The SEER project, coordinated by EUN Partnership AISBL Belgium, is a collaborative effort involving multiple partners, including the Indire Research Institute in Italy. Running from September 1, 2022, to August 31, 2025, the project focuses on enhancing STEM education across Europe. The primary aim is to consolidate and analyse existing data and classroom Activities to create an Atlas of effective STEM education practices. This comprehensive resource will highlight key indicators for success, with a particular emphasis on inclusion and gender diversity. By addressing biases and fostering a more inclusive approach, the SEER project seeks to provide educators with the tools and guidelines necessary to improve STEM education and better prepare students for future careers in these fields.
The SEER project has made significant strides in improving STEM education across Europe. Key results include: Comprehensive Atlas Creation: Developed an Atlas consolidating successful STEM education practices and outcomes from various European initiatives, providing a valuable resource for educators. Inclusive Education Strategies: Identified and promoted key indicators for effective STEM education, emphasising inclusion and gender diversity. Teacher Training Guide: Created a comprehensive guide to help teachers overcome biases and foster a more inclusive classroom environment. Collaborative Networks: Established partnerships with educational institutions, policymakers, and industry representatives to ensure a broad and impactful reach. Classroom Implementation: Successfully implemented STEM Activities in classrooms, addressing practical challenges and providing real-world examples of effective teaching methods. Policy Recommendations: Offered recommendations to Ministries of Education across Europe to enhance STEM education policies and practices, ensuring sustainability and long-term impact. These results reflect the project's commitment to fostering an inclusive and effective STEM education landscape, benefiting both educators and students.
The main stakeholders in the SEER project include: teachers and Educators: Responsible for implementing STEM Activities and incorporating inclusive practices in classrooms across all education levels. Students: The primary beneficiaries of improved STEM education practices, with a focus on encouraging gender diversity and inclusivity. Schools: Institutions that provide the environment and resources for STEM education and support the project's initiatives. Ministries of Education: National bodies involved in policy-making and providing guidelines for STEM education, ensuring alignment with broader educational goals. Industry Representatives: Partners from various industries who provide insights into future job skills and support educational Activities, bridging the gap between education and industry needs. European SchoolNet: Coordinating body that facilitates collaboration and data collection across different countries and educational systems.

Research Institutions: Entities like the Indire Research Institute that conduct analysis and provide data to inform project strategies and outcomes. Policymakers: Individuals and groups involved in shaping educational policies that support the integration and sustainability of STEM initiatives. Parents and Families: Key influencers in shaping students' attitudes towards STEM subjects and careers. Community Organisations: Groups that support the project’s outreach efforts and help in creating a broader impact within local communities. These stakeholders collectively contribute to the success and sustainability of the SEER project by providing resources, expertise, and support to enhance STEM education across Europe.

SGA Empowers

Description and main activities, results, challenges, recommendations and motivation

The SGA Empowers initiative, led by the Serbian Video Game Industry Association, is dedicated to empowering girls and young women to explore and pursue careers in the gaming industry and other technological and creative sectors. Through its annual programme, SGA Powers aims to break down gender stereotypes and inspire participants to consider diverse roles within the gaming industry, whether in artistic, technical, or business-oriented capacities.

The initiative targets high school girls, female students, and women already in the gaming industry. It hosts a comprehensive range of Activities including game development simulations for high school girls, workshops on game development tools for female students, and soft skills workshops for women professionals. By engaging participants in practical and educational experiences, SGA Powers encourages interest and involvement in the gaming sector from an early age through to professional career stages. Activities:

- High school girls: Game development simulation through case studies. Research in Europe has shown that girls between 13-14 years old who play games are more likely to enrol in STEAM fields compared to those who don't play games. Additionally, there are twice as many boys as girls graduating in STEM fields in the EU.
- Female students: Workshops focusing on using programmes and tools for game development.
- Women in the industry: Soft skills workshops.

Timing: One day in March, for the past three years.

There are no specific stakeholders that we can single out.

Over the past three years, SGA Powers has successfully attracted approximately 800 participants, contributing to a positive shift in perceptions and opportunities for women in the Serbian gaming industry. The initiative also addresses industry-wide challenges such as gender representation and career development, aiming to foster a more inclusive and supportive environment for future generations of female gamers and industry professionals.

Through ongoing efforts to showcase successful women in gaming, expand educational opportunities, and advocate for gender equality in the workplace, SGA Powers plays a pivotal role in shaping the gaming industry's future in Serbia and beyond.

The main stakeholders include:

- Educational Institutions: Collaborating with SGA to integrate awareness and opportunities in the gaming industry into formal education, potentially starting from elementary school to nurture early interest among students.
- Industry Partners: Supporting the initiative by providing resources, mentorship, and financial backing to programs aimed at fostering gender diversity and inclusivity in the gaming sector.
- Media and Public: Important for raising awareness about the SGA Powers program and promoting positive role models within the gaming industry, thereby influencing perceptions and encouraging more girls and women to consider careers in gaming.
- Government and Policy Makers: Potential stakeholders involved in supporting policies and initiatives that promote gender equality and encourage girls' participation in STEM and creative industries like gaming.

The Girls Go Circular program

Description and main activities, results, challenges, recommendations and motivation

The Girls Go Circular program, implemented by Junior Achievement Serbia, is funded by the European Union and the European Institute of Innovation and Technology - EIT Raw Materials. The Girls Go Circular is intended for female students aged 14 to 18 who acquire entrepreneurial and digital skills through learning about the circular economy, specifically sustainable use, consumption, and reuse of natural resources. The goal of the project is to familiarise as many high school girls as possible with STEM fields, so they can choose one of these areas as their career path.

The project is implemented through an educational platform where students have the opportunity to deepen their knowledge of the circular economy while gaining digital and entrepreneurial skills. The platform and its modules are designed to engage students in practical Activities, both individually and through group work, empowering them to work on solutions for important social and environmental challenges. At the beginning of each school year, Junior Achievement Serbia organises several online training sessions for teachers to familiarise them with the programme's goals and to provide hands-on experience with the Activities within the modules.

Junior Achievement Serbia has been implementing this programme for four consecutive years. During this period, 8.724 girls have started the program, while 6.373 students have successfully completed it. To successfully complete the programme, students need to "pass" two mandatory modules (Introduction to Circular Economy and Internet Safety) and one elective module (out of the 17 currently available).

Each year, as part of the Girls Go Circular program, the Women in STEM forum is organised. In addition to its online program, this forum brings together the best student teams in person. So far, students from the Fourth Gymnasium in Belgrade and the First Kragujevac Gymnasium from Kragujevac have represented Serbia in Brussels.

The main stakeholder is the EIT Raw Materials.

Women in Science

Description and main activities, results, challenges, recommendations and motivation

The Women in Science project, initiated by Professor of Microbiology at the University of Navarra and director of the Museum of Natural Sciences at the University of Navarra, began with a mission to inspire scientific vocations among girls and teenagers. It commenced with short, three-minute videos resembling comic strips, narrating the stories of both renowned and lesser-known scientists. Initially a volunteer effort, the project gained traction on social media and YouTube, prompting its expansion.

The project aimed to promote science, particularly among girls and adolescents, within the framework of STEAM. Initiated due to the absence of a specific project on this topic, its primary goal was to increase awareness and interest in science among young females. While acknowledging the recognition of prominent figures like Marie Curie, the project also highlighted lesser-known female researchers to diversify representation. The narratives revealed historical challenges faced by women in science, such as the late recognition of achievements and milestones, prompting reflection on gender disparities within the field.

Professors and researchers from the University of Navarra collaborated on scriptwriting and biography selection, while a broadcaster from the SER radio station contributed as a voiceover artist.

The Women in Science project has achieved significant milestones in promoting gender diversity and scientific vocations among girls and adolescents:

- Educational Videos: Initiated with short, engaging videos resembling comic strips, the project narrates the stories of both renowned and lesser-known female scientists. These videos garnered popularity on social media and YouTube, reaching a wide audience interested in science.
- Educational Material: In its second phase, the project transitioned to compiling biographies into a book with accompanying classroom Activities tailored for secondary school levels. This material, developed in collaboration with educators, aimed to inspire young girls to pursue STEAM fields through accessible and relevant content.
- Multilingual Accessibility: Recognizing the importance of language diversity, the project underwent translation into Basque and Catalan, with ongoing efforts to expand into Galician and English. This initiative broadened its reach beyond Spanish-speaking regions, facilitating global accessibility to educational resources.
- Impact Evaluation: The project has initiated efforts to evaluate its impact, particularly in secondary schools. Positive indicators include high viewership of educational videos, media interest in project materials, and positive feedback from students and educators, indicating a growing influence in promoting women in STEM.

The "Women in Science" project continues to evolve, emphasising its commitment to advancing gender diversity in science and inspiring future generations of female scientists and The Chair of Culture of the Basque Country, and in the beginning the Spanish Foundation for Science and Technology (FECYT) Ministry of Science, Innovation and Universities of the Government of Spain.

STEAM camp

Description and main activities, results, challenges, recommendations and motivation

The STEAM camp, initiated by the Knowledge Economy Forum (ZEF) and British Council in Lithuania, aims to address critical issues within STEAM education, particularly focusing on the underrepresentation of girls. Motivated by insights gained from a US internship on inclusivity in STEAM, the project aimed to:

- Direct Engagement: Implement direct Activities aimed at underrepresented groups, fostering hands-on experiences and exposure to STEAM subjects.
- Educator Collaboration: Encourage teachers to share best practices in engaging girls in STEAM, emphasising the importance of practical, experiential learning.
- Ecosystem Enhancement: Enhance communication and collaboration among STEAM centres to create a supportive environment conducive to learning and innovation.
- Cultural Mentoring: Promote mentoring as a cultural practice within STEAM, leveraging role models and success stories to inspire girls from diverse backgrounds.
- Inclusive Learning Environment: Create a safe and supportive environment where girls can explore STEAM fields without fear of failure, emphasising the value of experimentation and learning through practical experience.

By addressing these motivations, the STEAM camp aimed to empower girls in Lithuania to pursue and excel in STEAM education, fostering a future generation of diverse and skilled professionals in science, technology, engineering, arts, and mathematics.

The STEAM camp, spearheaded by the ZEF in Lithuania, was dedicated to advancing STEAM education with a focus on inclusivity and gender diversity. Originating from insights gathered during a US Embassy-sponsored internship on inclusivity in STEAM, the project aimed to bridge gaps in STEAM participation among girls and underrepresented groups. Through a series of initiatives and collaborations with educators and stakeholders, ZEF aimed to create an inclusive environment where young girls can engage actively in STEAM subjects, fostering their interest and confidence in these fields from an early age.

The STEAM camp has achieved significant milestones in promoting STEAM education among girls in Lithuania. Over the course of its implementation, the project successfully organised a four-day STEAM camp in Vilnius, engaging schoolgirls in hands-on experiments and interactions with female researchers. This initiative not only fostered a supportive learning environment but also aimed to combat stereotypes and inspire girls to pursue careers in STEAM fields. The main stakeholders involved in the project include:

- British Council in Lithuania: Provided funding and support for the ZEF project, contributing to its successful implementation.
- Local Schools and Educators: Collaborated to facilitate participation and integrate STEAM Activities into educational curricula.
- Parents and Guardians: Supported their children's involvement in the camp and provided feedback on the initiative.
- Female Researchers and Mentors: Engaged participants in hands-on experiments and shared their experiences to inspire future careers in STEAM fields.
- Supporting Organisations and Volunteers: Contributed resources, expertise, and logistical support to ensure the camp's success.
- Community Partners: Facilitated access to facilities and equipment necessary for conducting STEAM experiments.

These stakeholders collectively contributed to creating a supportive environment that encouraged girls to explore and engage with STEAM subjects, aiming to foster long-term interest and career aspirations in these fields.

PROJECTS/INITIATIVES WHOSE OWNERS WERE INTERVIEWED COVERING DIFFERENT TARGET GROUPS (STAKEHOLDERS, EDUCATORS, STUDENTS AND PUPILS

Although these projects do not exclusively target women and girls, their significance is not diminished, which is why their owners were chosen for interviews. One of the ways to enhance the participation of girls in STEAM is by involving the broader community in such projects and engaging all stakeholders who can influence these initiatives. Primarily, this refers to educators, namely teachers and instructors in primary and secondary schools, as well as representatives of local authorities and the public sector in general. The projects presented here are of this nature, and from their results, we can see the importance of involving all relevant stakeholders in promoting STEAM among girls.
Projects and initiatives that are described in this chapter are: CodeAcademy Kids, IN2STEAM, OTTER Project, Project GILL, Road-STEAMer Project and The Robotics Academy.
In the following sections, we explore each initiative in detail, examining the main motive/inspiration for initiating the initiative/project, description of the project/initiative, main results of the implemented project/initiative (contribution to supporting and empowering women/girls in STEAM) and stakeholder involvement. Through these sections, valuable insights are gained into the multifaceted efforts to promote STE(A)M education and foster inclusivity, particularly for girls.

Code Academy Kids

Description and main activities, results, challenges, recommendations and motivation

Code Academy Kids began seven years ago, initially offering courses for children and adults. The initiative came out from a recognition of the market opportunity and the need expressed by parents for programming education for their children. Despite facing numerous competitors today, the initiative was unique in its early days. Over time, a desire to focus more on girls raised from a commitment to help talented girls realise their potential in the IT sector. The initiative is not specifically oriented towards women in STEAM, so there is a problem of the inequality of girls among all participants, prompting consideration of launching a dedicated programme for girls.
Code Academy Kids provides programming education to children aged 7-16 years, offering courses of varying difficulty levels. Notably, there are no observable differences between genders in different age groups. To make programming engaging, the initiative teaches through the development of games and web design. Currently, the initiative has 368 pupils, with girls comprising only 7-8% of the total enrolment. However, more girls tend to enrol in web design classes, attracted by the opportunities for design expression. Despite living in modern times, gender stereotypes persist, with societal attitudes often discouraging girls from pursuing IT-related fields.
Stakeholders involved in Code Academy Kids include parents, children, educators, and cooperation partners like Unity. Unity not only supervises the quality of programmes taught but also advocates for girls in IT. Collaboration with such partners is essential for promoting inclusivity and diversity in the IT sector. Additionally, fostering supportive communities and challenging gender stereotypes within families and broader society are crucial for encouraging girls to pursue programming and other STEAM-related fields without reservation.

European Observatory on Gender in Science, Technology, and Innovation (Gender STI) project

Description and main activities, results, challenges, recommendations and motivation

The "European Observatory on Gender in Science, Technology, and Innovation" (Gender STI) project focuses on integrating gender equality into bilateral and multilateral dialogues within the realms of science, technology, and innovation. This initiative is supported by a consortium of 18 partners from various continents, addressing critical challenges such as promoting gender equality in scientific careers, achieving gender balance in decision-making roles, and embedding the gender dimension into research and innovation contexts. The creation of the European Observatory on Gender in Science, Technology, and Innovation is a notable result of this project. The observatory provides valuable resources and facilitates ongoing dialogue on gender equality within these fields. It encompasses several sections, including international dialogues, Co-Design Labs, a Community of Practice, and an extensive collection of resources.

The main inspiration for initiating the Gender STI project stemmed from the European Commission's strategy for gender equality. This strategy emphasises the importance of promoting gender equality in scientific careers, ensuring gender balance in decision-making positions, and integrating gender considerations into research and innovation.

Implementing the project came with its own set of challenges. Key among these were managing a large international consortium across different time zones and adapting to online methodologies due to the pandemic. Additionally, ensuring fluid communication and engagement among partners from diverse cultural backgrounds posed significant hurdles.

Looking forward, recommendations for a new project aimed at further empowering girls and young women in STEAM include establishing mentoring programs in higher education institutions to support women in STEM careers, implementing multi-level strategies to combat stereotypes, and actively involving men in gender equality initiatives. Policymakers and institutions must recognize and address gender inequality comprehensively to foster an inclusive environment.

This cohesive approach underscores the importance of sustained efforts and innovative strategies to support and empower women in STEAM fields.

IN2STEAM

Description and main activities, results, challenges, recommendations and motivation

IN2STEAM, "Inspiring Next Generation of Girls through Inclusive STE(A)M Learning in Primary Education", was conceived to address the underrepresentation of girls in STE(A)M fields by enhancing teacher competence in delivering STE(A)M concepts to young children, with a specific focus on girls. Recognizing the importance of early exposure to STE(A)M and the role of educators in fostering interest and competency, the project aimed to equip primary school teachers with the necessary tools and methodologies to engage girls effectively in STE(A)M subjects from an early age.

Coordinated by CESIE in Palermo, IN2STEAM involved partners from Poland, Portugal, Greece, Turkey, and Cyprus. The project was implemented in two main steps. Firstly, primary school teachers participated in a free online course to enhance their understanding of STE(A)M methodologies and approaches. Subsequently, these methodologies were compiled into the "Digital Teacher's Toolkit (DTT)", providing teachers with creative ICT and real-life application examples of STE(A)M concepts. The DTT aimed to improve student learning outcomes and foster girls' interest in STE(A)M through Activities and lesson plans. Additionally, the project established IN2STE(A)M Labs in partner countries, where female STE(A)M professionals engaged with students to encourage them to pursue careers in STE(A)M disciplines.

IN2STEAM yielded several tangible outcomes aimed at promoting STE(A)M education and gender-sensitive practices in primary schools. The "Report on the Value of STE(A)M in Girls' Education" provided insights into local contexts and identified needs and gaps in teacher professional development. The "Online Training Curriculum in STE(A)M Learning and Gender-Sensitive Practices" equipped teachers with competencies to use STE(A)M approaches effectively, particularly among young girls. The "Digital Teacher's Toolkit (DTT)" offered innovative teaching resources to engage students in STE(A)M concepts. Furthermore, the "European Charter for STE(A)M Education" aimed to raise awareness of interdisciplinary learning and provide recommendations for decision-makers in education.

Stakeholders involved in IN2STEAM included primary school teachers, educators, and young students, particularly girls, who benefited from enhanced STE(A)M education. Female STE(A)M professionals played a crucial role as role models, engaging with students in IN2STE(A)M Labs to inspire them to pursue careers in STE(A)M fields. Decision-makers in education were also targeted through the "European Charter for STE(A)M Education," which aimed to promote interdisciplinary learning and gender-sensitive practices in school education. Overall, IN2STEAM fostered collaboration among diverse stakeholders to promote inclusive STE(A)M education in primary schools.

OTTER project

Description and main activities, results, challenges, recommendations and motivation

The OTTER project was inspired by the imperative to foster education outside of traditional classrooms, with a specific focus on advancing knowledge about science for a sustainable future, particularly in combating plastic pollution. Recognizing the importance of creativity and representation, OTTER aimed to empower participants by providing leadership opportunities and exposing them to real-world experiences, such as visits to scientific institutes and NGOs. Moreover, OTTER sought to address social inequalities by engaging with disadvantaged communities, thereby transcending gender-specific issues to encompass broader social challenges.

Managed by Geonardo, an SME based in Hungary, Budapest, the OTTER project was initiated under Horizon 2020 with a focus on science for and with society. With partners from Cyprus, France, Hungary, the Netherlands, Spain, Finland, and Ireland, OTTER's primary objective was to explore how education outside the classroom could enhance the uptake of STEAM subjects and motivate both students and teachers. As part of its mission, OTTER chose to tackle the issue of plastic waste reduction within the framework of sustainability. Pilot projects were implemented in various educational systems across Europe, including Finland, Ireland, Spain, and Hungary, each with its own unique challenges and opportunities.

Through the implementation of educational pilots and rigorous scientific evaluation, OTTER has generated valuable insights into the efficacy of education outside the classroom in enhancing motivation and fostering responsible citizenship. Scientific findings, including peer-reviewed papers, demonstrate the positive correlation between Education Outside the Classroom (EOC) methods and student engagement. The creation of the OTTER Hub, a platform connecting teachers and experts across Europe, has facilitated knowledge exchange and collaboration, while the establishment of OTTER Outdoor Labs has enabled the development and evaluation of EOC Activities in diverse educational contexts.

Stakeholders involved in the OTTER project include academia, higher education institutions, NGOs, and local stakeholders. By fostering collaboration among these diverse actors, OTTER has created a dynamic ecosystem for sharing best practices, addressing challenges, and advancing methodologies related to Education Outside the Classroom. Monthly meetings organised by project partners provide a forum for exchanging experiences and insights, further enhancing the collective impact of OTTER's initiatives on STEAM education and sustainability.

Project GILL

Description and main activities, results, challenges, recommendations and motivation

Project GILL, led by the European Network of Living Labs (ENoLL), is driven by a fundamental desire to empower women and address gender-related barriers in innovation and entrepreneurship. Utilising the Living Lab and co-creation approach, GILL aims to shift the paradigm towards sustainable mechanisms that foster Gender Responsive Smart Innovation and Entrepreneurship (GRSIE). By addressing cultural norms and barriers, GILL endeavours to create an environment where women and other minority groups are not merely empowered but actively engaged in the innovation ecosystem.

GILL, composed of 17 partners from 10 countries, establishes a pan-European collaboration and learning hub based on Living Lab principles. Through co-creation, GILL seeks to develop sustainable mechanisms that promote GRSIE and dismantle gender-related barriers in innovation and entrepreneurship. The project's focus extends beyond women to encompass all minority groups potentially excluded based on factors such as sexual orientation and ethnicity. GILL's objectives include enabling organisational and cultural changes, enhancing professional development, integrating gender and diversity into product design and innovation, and fostering gendered educational practices.

In its initial year, GILL has made significant progress towards its goals. Through mapping exercises and stakeholder consultations, the project has identified key areas requiring attention, including gender representation in STEM and leadership roles. Deliverables such as the Strategy Planning for Policy Development, Dynamic Capacity Building Methodology, and Roadmap for Gendered Responsible Smart Innovation and Entrepreneurship (GRSIE) provide tangible outcomes to guide future Activities. The project has also highlighted the importance of engaging ministries and policymakers to ensure the sustainability and scalability of its initiatives.

Stakeholder engagement is central to the success of Project GILL. By fostering dialogue and co-creation among actors across the quadruple helix—citizens, industry, government, and academia—GILL aims to build a collaborative ecosystem conducive to gender-responsive innovation. While ministries and policymakers were not initially involved, their support will be crucial in the next phase of policy dialogue. GILL's approach to stakeholder identification and engagement, targeting representatives from both EU and local levels, ensures that diverse perspectives are considered and integrated into project Activities.

Road-STEAMer project

Description and main activities, results, challenges, recommendations and motivation

The Road-STEAMer project emerged from a collective desire among partners to advance STEAM (Science, Technology, Engineering, Arts, Mathematics) education beyond conventional boundaries. Building upon previous collaborations in open science and education, the project seeks to transition from localised school-level applications to broader policy-level recommendations. Motivated by a commitment to fostering creativity, collaboration, and interdisciplinary connections, Road-STEAMer aims to redefine STEAM education, moving away from rigid curricula towards more holistic and flexible approaches.

The Road-STEAMer project is a collaborative endeavour involving both longstanding partners and new contributors. Led by the Lisbon Council, the project aims to develop a comprehensive policy roadmap for mainstreaming STEAM education within Horizon Europe and other relevant programmes, encompassing both European and non-European partners. The roadmap, scheduled for completion by August 2025, will offer practical recommendations for policymakers to enhance STEAM education at various levels. Additionally, the project will produce a toolkit for educators, derived from its findings, to support the implementation of innovative STEAM practices in educational settings.

The Road-STEAMer project has yielded several significant outcomes thus far. Through extensive literature reviews and stakeholder consultations, the project has refined its understanding of STEAM education, emphasising creativity, collaboration, and inclusivity. Flexible criteria for assessing STEAM practices have been developed, facilitating the evaluation of diverse educational approaches. Moreover, the project has conducted academic studies, mapped STEAM practices across Europe, and identified conditions that either facilitate or hinder STEAM Activities in schools. The project's engagement with educators and stakeholders has led to valuable feedback and revisions, ensuring that its recommendations are practical and grounded in real-world experiences.

The success of the Road-STEAMer project hinges on the active involvement of various stakeholders. Policymakers play a central role, as the project seeks to provide them with actionable recommendations for advancing STEAM education policies. Educators and educational researchers contribute their expertise and insights, ensuring that the project's outputs are relevant and effective. Additionally, engagement with diverse communities, including underrepresented groups and socio-economically disadvantaged areas, underscores the project's commitment to equity and inclusion in STEAM education. By fostering collaboration among stakeholders and promoting dialogue across Europe, the Road-STEAMer project aims to catalyse positive change in the field of STEAM education.

The Robotics academy

Description and main activities, results, challenges, recommendations and motivation

The Robotics Academy was founded with a profound motivation to inspire and educate children, particularly focusing on instilling a love for robotics and STEM fields. Kristijonas Vasiliauskas, the founder, envisioned a space where youngsters could delve into the world of robotics, just as he did in his childhood. The driving force behind this initiative was a beautiful idea: to nurture creators who, through meaningful learning experiences today, would shape a significant and inspiring tomorrow. The Academy is deeply committed to fostering equality and inclusivity, especially noting the disparity in girls' participation in STEM Activities. Thus, the motivation extends beyond mere education; it aims to create a transformative impact on society by empowering children with valuable skills and knowledge.

The Robotics Academy, now in its 11th season, offers a range of programmes catering to children aged 4-10 years. These include after-school Activities once a week and summer camps tailored for older children, typically 5^{th}-6^{th} graders up to the age of twelve. Recognizing the need for gender-inclusive approaches, the Academy has implemented strategies to encourage equal participation of girls and boys in STEAM Activities. This includes the creation of relatable characters like “Kita” for girls to identify with, and the organisation of specific girls' summer camps. Moreover, the Academy continually evolves its curriculum to align with the changing interests and hobbies of children as they grow older, ensuring relevance and engagement.

The impact of the Robotics Academy's initiatives is tangible and widespread. By providing a nurturing environment where children can explore robotics and STEM subjects, the Academy has witnessed increased engagement and satisfaction rates among its participants. The introduction of girls' summer camps has been particularly impactful, offering a safe space for girls to thrive and develop their interests without the pressures of competition. Expansion to new locations like Dublin and Chicago has further validated the effectiveness of the Academy's approach, with impressive enrolment rates and positive feedback from both genders. Through strategic partnerships and teacher training programs, the Academy continues to foster a culture of innovation and inclusivity, laying the groundwork for a brighter future.

The success of the Robotics Academy relies on the collaboration and support of various stakeholders. Firstly, there are the children themselves, who benefit from the enriching educational experiences provided by the Academy. Parents play a crucial role as well, entrusting the Academy with their children's learning and development. Teachers serve as essential ambassadors, driving change and inspiring students through their dedication and expertise. Additionally, the wider community, including educational institutions and policymakers, plays a vital role in fostering an environment conducive to STEM education and gender equality. Together, these stakeholders form a cohesive network dedicated to empowering the next generation of innovators and change-makers

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