

## 1. Methodology

### A. Background

The *Gender and STEM Education in Romania* (“GENSTEMED”) project seeks to better understand practices that influence Romania’s position as a global leader in Gender and STEM, as observed in its relatively high level of representation of women as researchers and industry practitioners in STEM fields, especially Technology. Project work aims to understand and *promote the lived experience of STEM practitioners, (prospective) educators, other ecosystem actors and students in Romania, and to thus add to the body of regional and global knowledge about practices that positively impact gender equity in STEM*. In addition, the project will take advantage of a hybrid showcase event to promote findings from its research activities and will also demonstrate application of the theory by deploying a digital skills workshop targeting K-12 students, thus promoting learned “Gender and STEM Education” practices toward educators and ecosystem actors, and toward students themselves. In this way, the “Gender and STEM Education in Romania” project aims to contribute both directly and indirectly to achieving SDGs 4, 5 and 9 in Romania, in Southeast Europe, and beyond.

### B. Project Objectives

Building on the 2023 “Gender and Digital Policies in Southeast Europe” report authored for UNESCO SEE by Cheryl Miller, global expert on Gender and STEM, and in order to facilitate uptake of the UNESCO STEM Alliance Roadmap which includes “Promote Innovative Teaching and Learning Methods (T&L),” including Innovative Approaches that focus on Gender Equity, the project aims to carry out a combination of quantitative and qualitative research with STEM practitioners, (prospective) educators, other ecosystem actors, and K-12 students in Romania in order to gain a better understanding of practices that influence Romania’s position as a leader in Gender and STEM, as observed in its relatively high level of representation of women as researchers and industry practitioners in STEM fields, especially Technology.

### C. Results

Outcomes of surveys and interviews conducted during the Research Activities phase of the project will be shared, discussed and demonstrated in the context of an event targeting STEM community members in Romania, in Southeast Europe and further afield. The event will also showcase best practices in “Gender and STEM in Romania,” captured and validated through Research Activities, and carried out as Educational Activities that include a hands-on digital skills workshop for K-12 students which will also be the subject of a Train-the-Trainer Toolkit for educators. Educational Activities will have the aim of promoting Gender and STEM best practices for wider uptake in Romania, in the STEM Education in SEE community, and beyond. Report findings and outcomes from the project’s Research and Educational Activities will be shared in as an Intermediate Report in the context of the Showcase Event, and as a Final Report for

wider dissemination at the end of the project. In this way, the project aims to contribute to achieving SDGs 4, 5 and 9 in Romania, in Southeast Europe and beyond.

## D. Mixed Method

To achieve project objectives, GENSTEMED partners will carry out Research Activities through a mixed method approach, as illustrated in **Figure 1**, utilizing a combination of Quantitative and Qualitative Research Methods, in an *Explanatory Sequential Design*.<sup>1</sup> Details related to this approach are included in the present section.

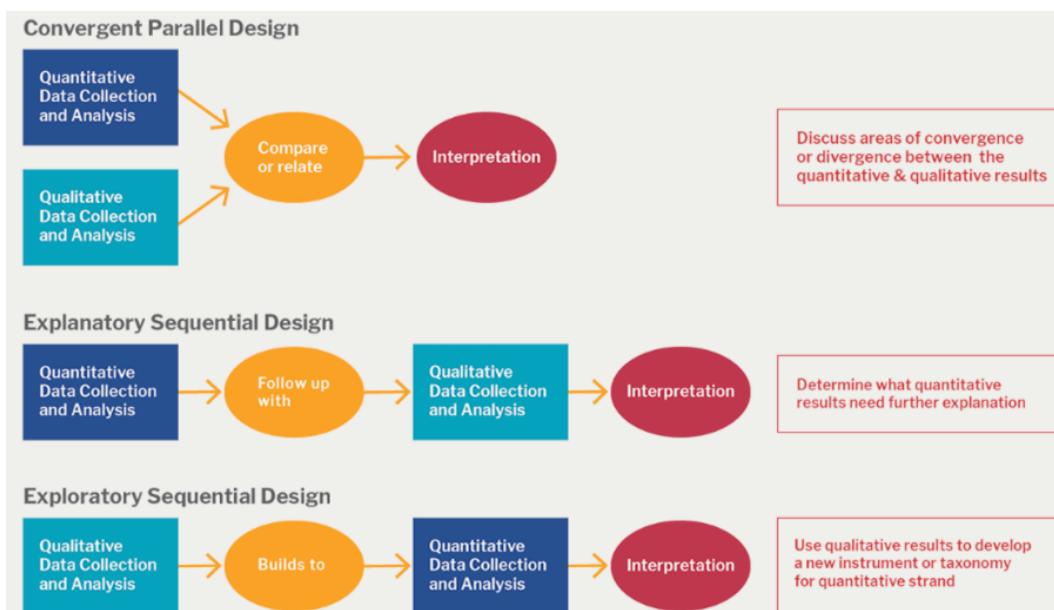


Figure 1: Mixed Method Approach

### (1) Quantitative Research Method

a. Background: GENSTEMED project partners will utilize a qualitative research method in two phases of the project: First, in order to lay the groundwork for the Qualitative Research Activities which form the bulk of the project's research effort; and second, to evaluate participant feedback on the Showcase Event and related activities, including for the Emerging Technology and train-the-trainer Workshops.

Initially, in order to frame the Qualitative Research Activities of the project, quantitative research efforts will involve desk research on various sources of data which are largely captured in the referenced report authored by project expert Cheryl Miller and in the UNESCO Europe Region STEM Repository. Latter quantitative research will take the form of a satisfaction survey developed by the project team in order to analyze and report on data collected from showcase event participants.

<sup>1</sup> Mixed methods research. Community Engagement Program. Harvard Catalyst. Accessed September 13, 2024. <https://catalyst.harvard.edu/community-engagement/mmr>

b. **Method Rationale**: A Quantitative Research method will be utilized in the project both in order to describe the characteristics of actors in the Gender and STEM (Education) ecosystem in Romania, to test hypotheses related to these actors, and to examine the relationship between behavior and the phenomena observed in this ecosystem. This effort will have the purpose of better understanding practices that influence Romania's position as a global leader in Gender and STEM, as observed in its relatively high level of representation of women as researchers and industry practitioners in STEM fields, especially Technology. The analysis will be applied to formulating the Surveys and Interview Questionnaires that make up the qualitative research undertaken as the main thrust of project research, and whose outcomes will be captured in the Intermediate and Final Project Reports and in the pedagogical approach captured in the

c. **Research Steps**: Respecting the project's quantitative research methodology, project partners will carry out the following steps:<sup>2</sup>

- i. ***Theory***: Define problem area and postulate research question.
- ii. ***Hypothesis***: Develop a hypothesis based on the research question.
- iii. ***Research Design***: Select appropriate quantitative research design including sample size, research sites, etc.
- iv. ***Data Collection***: Collect data based on the foregoing.
- v. ***Data Analysis***: Analyze data collected and test hypothesis.
- vi. ***Present Results***: Draw conclusions and present outcomes.

d. **Research Scope**: Initial scoping for the project's quantitative research is captured below.

- i. ***Research Objectives***: Support understanding of the Gender and STEM (Education) ecosystem in Romania from a data-driven perspective in order to contribute context to the qualitative research activities and Educational Activities of the project;
- ii. ***Research Activities***: Carry out desk research on existing data from national, regional and international sources in order to illustrate the state of Gender and STEM (Education) in Romania from an ecosystem perspective, along with comparable data from other geographies, and include a historical perspective where possible; and design and collect evaluations of the Showcase Event;
- iii. ***Target Research Outcomes***: Provide a data-driven overview of the state of Gender and STEM (Education) in Romania from an ecosystem perspective, with comparative analysis of other countries, regions and global context, along with historical context where possible; give context for project Qualitative Research and Educational Activities;
- iv. ***Target Research Impact***: Provide a quantitative context for Qualitative Research and Educational activities in project;

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<sup>2</sup> Your ultimate guide to quantitative research. Qualtrics. Accessed September 13, 2024. <https://www.qualtrics.com/uk/experience-management/research/quantitative-research/>

- v. *Broader Impact*: Provide context for promoting, replicating and scaling practices that support greater gender parity in STEM education and careers in Romania and beyond, impacting the opportunity to achieve SDGs 4, 5 and 9 in Romania, in Southeast Europe and beyond, consistent with project objectives;
- vi. *Method Risks*: Limited, unreliable, or unavailable data, incomplete or incomparable datasets; linguistic, cultural, resource/time or other constraints, etc.;
- vii. *Project Risks*: Lack of appropriate framing and context for Qualitative Research and Educational Activities in project, creating risk to delivering project Research, Education and wider objectives.

*Figure 2: Preliminary Survey Approach*

## (2) Qualitative Research Method

a. Background: Project partners will carry out qualitative research to examine the lived experience of actors in the Gender and STEM (Education) ecosystem in Romania with the mission of gaining an understanding of factors influencing the relatively greater participation of girls and women in STEM studies and careers in Romania. This qualitative research will take the form of Surveys and Interviews designed and carried out by project team members which will be used to validate hypotheses related to best practices to increase gender balance in STEM fields. Learnings from the qualitative research will be captured in the formulation of Educational Activities later in the project in order to inform pedagogy and workshop content that will be delivered toward students and (prospective) educators, among others, who are target beneficiaries of the project.

b. Method Rationale: A Qualitative Research method, reflecting a phenomenological approach, will be utilized in the project in order to *collect, analyze, and interpret non-numerical data*, including responses to surveys and interviews, in order to *understand how actors in the Gender and STEM (Education) ecosystem in Romania subjectively perceive and give meaning to their social reality*<sup>3</sup> in this context. This research will seek to explain *why* there exists a relatively greater participation of girls and women in STEM fields in Romania, *and how this phenomenon manifests in this context*. This rationale will inform the design and delivery of Survey and Interview Questionnaires that will be used to collect qualitative feedback from research subjects which will in turn be analyzed and used to generate theories, conclusions and recommendations, which will be captured and further considered in the Intermediate Report, in content shared with Showcase Event participants, and in the Final Project Report.

c. Research Steps: Respecting a phenomenological qualitative method, project partners will carry out the following activities:

- i. *Research Design*: Design and deploy quantitative research tools based on Research Objectives and quantitative research outcomes, including Surveys and Interview Questionnaires, taking into account unique considerations for specific target respondents including minors,<sup>4</sup> and develop and deliver an engagement strategy for reaching a representative group of research subjects.
- ii. *Data Collection*: Collect data from Surveys and semi- or fully-structured Interviews based on Questionnaires.
- iii. *Data Analysis*: Analyze data using an approach like *thematic analysis*, to *code responses* and help identify *themes* within the data.<sup>5,6</sup>

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<sup>3</sup> Qualitative vs quantitative research: Differences, examples, & methods. Simply Psychology. Accessed September 13, 2024. <https://simplypsychology.org/qualitative-quantitative.html#Quantitative-Research>

<sup>4</sup> The Interview Method In Psychology. Simply Psychology. Accessed September 13, 2024. <https://www.simplypsychology.org/interviews.html>

<sup>5</sup> Qualitative vs quantitative research, *ibid*.

<sup>6</sup> Qualitative Data Coding. Simply Psychology. Accessed September 13, 2024. <https://www.simplypsychology.org/qualitative-data-coding.html>

iv. *Present Results*: Generate theories and present outcomes base on themes identified.

d. *Research Scope*: Initial scoping for the project's qualitative research is captured below.

i. *Research Objectives*: Support understanding of the Gender and STEM (Education) ecosystem in Romania from a qualitative perspective by researching *attitudes, perceptions and experiences* of key actors in the ecosystem, and on this basis, test hypotheses related to phenomena observed in the ecosystem delivered through quantitative research activities;

### PHASES OF THEMATIC ANALYSIS (ADAPTED FROM BRAUN & CLARKE, 2006)

	PHASES	DESCRIPTION OF ANALYSIS PROCESS
1	Familiarising myself with data	i) Narrative preparation, i.e. transcribing data ii) (Re-)reading the data and noting down initial ideas
2	Generating initial codes	i) Coding interesting features of the data in a systematic fashion across entire data set ii) Collating data relevant to each code
3	Searching for themes	i) Collating codes into potential themes ii) Gathering all data relevant to each potential theme
4	Reviewing themes	i) Checking if themes work in relation to the coded extracts ii) Checking if themes work in relation to the entire data set iii) Reviewing data to search for additional themes iv) Generating a thematic "map" of the analysis
5	Defining and naming themes	i) On-going analysis to refine the specifics of each theme and the overall story the analysis tells ii) Generating clear definitions and names for each theme
6	Producing the report	i) Selection of vivid, compelling extract examples ii) Final analysis of selected extracts iii) Relating the analysis back to the research question, objectives and previous literature reviewed

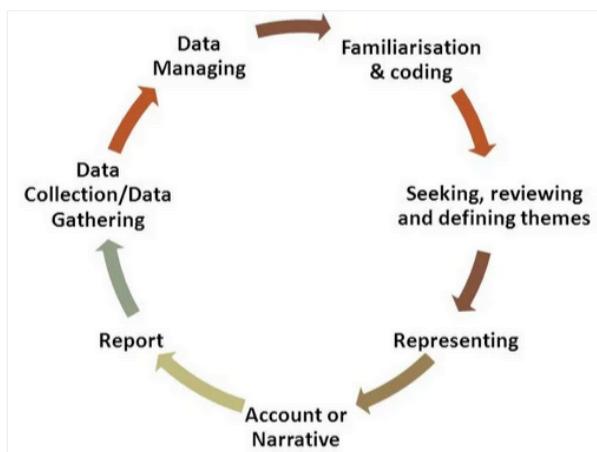


Figure 3: Sample Thematic Analysis - credit: Simply Psychology

ii. *Research Activities*: Design and carry out Surveys and Interviews of research subjects with the aim of better understanding the Gender and STEM (Education) in Romania ecosystem from a qualitative perspective, through attempting to

capture *attitudes, perceptions* and *experiences* related to the topics of "Education," "STEM," "Gender," and other relevant issues (TBC), and the interrelationship of these same, in Romania;

- iii. Target Research Outcomes: Validate *hypotheses* linked to the state of "Gender and STEM (Education) in Romania" by gaining insight into factors influencing this phenomenon from a qualitative perspective by researching *perceptions, attitudes* and *experiences of actors* in this ecosystem; Question relevance, resilience, scalability and replicability of observed phenomena in current and other contexts;
- iv. Target Research Impact: Validate hypotheses related to best practices and other factors apparently influencing leadership by Romania in Gender and STEM (Education) context and determine suitability for replication and scaling in other ecosystems;
- v. Broader Impact: Promote, replicate and scale practices that support gender parity in STEM education and careers in Romania, in turn impacting SDGs to achieving SDGs 4, 5 and 9 in Romania, in Southeast Europe and beyond, consistent with project objectives;
- vi. Method Risks: Design or other constraints in survey and/or interview tool and approach, limited and incomplete survey or interview responses, incomplete or incomparable responses, unavailable responses; linguistic, cultural, resource/time or other constraints, etc.
- vii. Project Risks: Lack of sufficient input to deliver Qualitative Research outcomes, which also inform Educational Activities in project, creating a risk to delivering project Research, Education and wider objectives.

### (3) Survey Approach

A preliminary scoping of the Qualitative Methodology and *Survey Approach* to be deployed in the project is excerpted in **Figure 2**.

## **E. Activities**

This section provides a high-level overview of the Research and Educational Activities to be carried out in the project, along with their interdependencies related to the Research Methodology, and project actors who are leading and supporting the activities.

### (1) Research Activities

Project Research Activities are described in this section in the context of the methodology.

*a. Desk Research*: Carry out desk research to understand the landscape of Gender and STEM Education in Romania, including reference to the UNESCO "Gender and Digital Policies in SEE" report and its sources, and the 2023 STEM Alliance report, and utilizing the UNESCO SEE STEM Alliance reference library - led by expert Cheryl Miller with project partner Digital Leadership Institute ("DLI" - [dlii.org](http://dlii.org));

**b. Survey:** Carry out qualitative research on the Gender and STEM Education ecosystem in Romania by developing and delivering two (2) online surveys in the English, Romanian and other languages (TBC) that target Romanian STEM educators, practitioners, ecosystem actors, and students - led by DLI;

**c. Interview:** Building on survey outcomes, develop and deliver two (2) interview questionnaires, and carry out a maximum of fifty (50) interviews of Gender and STEM Education ecosystem actors and Students in order to gain an in depth and diverse overview of *actions and practices that promote gender equity in STEM in Romania* - led by Ana Prica with project partner Asociația Femeilor în Inginerie, Știință și Tehnologie (“AFIST” - <https://afist.ro/>);

**d. Report:** Deliver Interim Research Findings and a Final Project Report based on results from the Surveys and Interviews - led by DLI and supported by AFIST and Scoala Germana;

**e. Showcase:** Engage ecosystem actors and share Interim Research Findings in the context of a Practitioner Panel/Roundtable, Keynote Speeches and Inspiring Talks, as part of a showcase event on “Gender and STEM Education in Romania” in Fall 2024 - led by Gabriela Costea and Florin Droc with project partner Hermann Oberth International School (“Scoala Germana” - <https://www.scoala-germania.ro/>);

**f. Evaluate:** Design and delivery Evaluations of project Educational Activities for input to Final Project report - led by DLI and supported by AFIST And Scoala Germana; and

**g. Report:** Synthesize learnings, outcomes and feedback in the form of a Final Project Report which captures Survey, Interview and Evaluation Results, Analysis and Recommendations, etc. - led by DLI and supported by AFIST and Scoala Germana.

## (2) Educational Activities:

Project Educational Activities are described in this section in the context of the methodology.

**a. Curriculum:** Develop and deliver a hands-on, digital skills workshop on emerging-technology subjects for K-12 students, which showcase practices for increasing participation of girls and women in STEM Education and Careers, taking advantage of critical thinking and problem solving approaches, inquiry-based learning, and promoting cross-sectoral skills and citizen science - led by DLI;

**b. Train-the-Trainer Toolkit:** Develop and deliver a train-the-trainer toolkit for the foregoing workshop to be disseminated toward stakeholders in the K-12 school system of Romania, SEE, including STEM Alliance, EU, and beyond - led by DLI;

**c. Showcase:** Engage stakeholders and beneficiaries to share project learnings and showcase best practices for Gender and STEM Education in action, in the form of an event with in-person stakeholders and remote collaborators, which includes organizing

the noted Emerging Technology Workshop for K-12 Students, and Keynote Speeches and Inspiring Talks targeting K-12 students - led by Scoala Germana and supported by DLI and AFIST;

d. Report: Synthesize learnings, outcomes and feedback in the form of a Final Project Report which captures Workshop Curriculum, Train-the-Trainer Toolkit, Survey, Interview and Evaluation Results, Analysis and Recommendations, etc. - led by DLI and supported by AFIST and Scoala Germana.

## F. Research Impact

### (1) State-of-the-Art

During the STEM Research phase of the Gender and STEM Education in Romania project, partners will carry out primary qualitative research toward STEM practitioners, (prospective) educators, ecosystem actors and students in Romania, in order to better understand world class practices and experiences that contribute to Romania's global leadership in participation of girls and women in STEM fields, especially Technology. These practices represent new knowledge which will add to the state-of-the-art in terms of effective approaches for achieving gender equity in STEM domains, including Education. In the STEM Education phase of the project, outreach and dissemination activities will be informed by learnings from the STEM Research phase so these best practices can be shared further afield in order to better equip educators on approaches to increase diversity in STEM, and thus contribute ultimately enhancing processes to equip future generations of students with STEM competencies.

### (2) Education

Furthermore, the Gender and STEM Education in Romania project will capture innovative education practices to encourage greater participation of girls and women in STEM studies, careers and leadership, and contributes to spreading these practices within the STEM Education ecosystem in Romania, SEE, the Mediterranean, in Europe and beyond. The project will thus also add to innovation potential in Romania, the country where the project is carried out, and among these and other countries whose stakeholders are target beneficiaries of the project.

### (3) Pedagogy

Through hands-on, best-practice-based workshops which promote *critical thinking and problem solving, inquiry-based learning, cross-sectoral skills and citizen science*, the project will directly impact a group of students with STEM competencies they did not have prior, aiming thus to positively influence their decision to pursue STEM studies and careers. In addition, by demonstrating the approach and disseminating curricula and a train-the-trainer toolkit for these workshops, the project promises to equip existing and prospective educators with the mindset and skills that will promote action to improve gender parity in STEM domains, thus contributing to actions that will increase the size and diversity of the STEM-skilled workforce among beneficiary communities. In this way, the project lays foundational groundwork for similar projects and approaches to be taken up on a larger scale with the vision of enhancing processes for equipping future

generations with STEM competencies, and specifically by making these domains more attractive to those who identify as girls and women, and ultimately, to everyone.

## **G. Expected Results**

### **(1) Overview**

The main project Results will be the following:

- a. Preliminary Project Report
- b. Intermediate Project Report - including preliminary Research Results
- c. Showcase “Gender and STEM in Romania” Event - targeting both Practitioners and Students
- d. Student “Emerging Technology” Workshop
- e. Train-the-Trainer Toolkit
- f. Final Project Report with Analysis, Recommendations and Way Forward

### **(2) Description and Impact**

A one-day, hybrid showcase event on "Gender and STEM Education in Romania," targeting fifty (50) (prospective) educators, decision-makers, ecosystem actors and sixty (60) K-12 students, will include two keynote presentations, a practitioner panel with 5-7 panelists, 1-3 inspiring role model talks, and one hands-on digital skills workshops showcasing “Gender and STEM” best practices. In this context, role model talks and hands-on digital skills workshops will be delivered to maximum sixty K-12 students, with ten of those students in “Junior Workshop Leader” roles, in order to directly benefit students from practices promoting gender parity in STEM. The workshops will also serve to showcase Gender and STEM Education best practices toward minimum fifty (50) ecosystem actors in-person and one-hundred (100) online. The digital skills workshops will be the subject of a Train-the-Trainer Toolkit to be developed and disseminated toward minimum 25 educators as a project outcome.

### **(3) Milestones and Indicators**

Other milestones of the project with related impact indicators include the following:

- a. Online surveys (x2) in English, Romanian and other languages (TBC), targeting responses from Gender and STEM (Education) ecosystem actors, including students (minimum 100 respondents total);
- b. Interview questionnaires (x2) and interview results from a subset of survey respondents (minimum 50 interviewees);
- c. Workshop curricula for K-12 students on an emerging technology subject;
- d. Train-the-trainer toolkit related to the Workshop;
- e. Preliminary Project Report;
- f. Intermediate Project Report - detailing Analysis and Recommendations; and
- g. Final Project Report - detailing outcomes from the project's Research and Educational activities.

#### (4) Research Activities

**a. Objectives:** Research Activities of the project aim to achieve a better understanding of the ecosystem and actions in Romania that support participation of girls and women in STEM fields, in order to promote and showcase these practices and to encourage their replication and scaling further in Romania, in other countries of Southeast Europe, and beyond.

**b. Activities:** Research Activities of the “Gender and STEM Education in Romania” project include:

Reviewing existing research on Gender and STEM in Romania, SEE and beyond, in order to understand the context of the undertaking. On this basis, the project team will draft and disseminate two online surveys in the English, Romanian and other languages (TBC) which target diverse STEM ecosystem stakeholders in Romania, including (prospective) Educators and Ecosystem Actors, STEM Researchers and Practitioners, and Students in K-12 and at post-secondary levels.

Based on survey outcomes, a series of interviews will be developed and carried out in order to refine and gain deeper knowledge about the experiences and attitudes held by targeted stakeholders on the subject of “Gender and STEM Education in Romania”. Outcomes from the surveys and interviews will be analyzed and disseminated first, in the form of preliminary research findings in the context of a showcase event, during which K-12 students who take part in onsite digital skills workshops will also be surveyed. Then, findings from all these undertakings, including Analysis and Recommendations, will be captured and disseminated via a final project report.

**c. Results:** These Research Activities will deliver:

- Two Online Surveys in the English, Romanian and other languages (TBC), respectively targeting Ecosystem Actors and Students as stakeholder groups, and their Results;
- Two Interview Questionnaires targeting Ecosystem Actors and Students, and their Responses;
- A Showcase Event, including a Practitioners Panel/Roundtable to share Interim research Results and garner Feedback;
- Evaluations from Practitioners/Ecosystem Actors; and
- A Final Project Report capturing Analysis and Recommendations.

#### (5) Educational Activities

**a. Objectives:** Building on Research activities carried out earlier in the project, Educational activities of the project aim to showcase best practices for engaging and retaining girls and women in STEM studies and careers based on lived experiences of students, practitioners, educators and ecosystem actors in Romania. On this basis, the project aims to achieve a better understanding of the ecosystem and actions in Romania that support participation of girls and women in STEM fields, in order to

promote these practices and to encourage their uptake, replication and scaling further in Romania, in other countries of Southeast Europe, and beyond.

***b. Activities:*** Educational Activities of the “Gender and STEM Education in Romania” project include, based on research outcomes, developing and delivering two workshops for K-12 students focusing on areas of “emerging technology”; developing Train-the-Trainer Toolkit based on the student workshops for subsequent dissemination to educators; Curating role model talks and awards activities to take place in the context of a Showcase event toward K-12 students; and developing and deploying the “Gender and STEM Education in Romania” showcase event, plus followup.

***c. Results:*** This Educational stream of work will deliver:

- One Emerging Technology Workshop curriculum;
- A Emerging Technology Train-the-trainer Toolkit;
- A Showcase Event, including an Emerging Technology Workshop for K-12 students;
- K-12 student Surveys and Evaluations;
- Role Model inspiring talks; and
- A Final Project Report capturing Analysis and Recommendations Expected results of the project

## (6) Survey Approach

### **I. Qualitative Research (recap)**

#### A. Project Objectives:

1. Equip the next generation with the mission, vision and (STEM) tools to achieve SDGs, etc.
2. Reinforce ecosystem to support (gender parity) diversity in STEM studies & careers (to address STEM workforce shortage, digital skills shortages, etc.)
3. Test perceptions about STEM, Education, Gender in Romania / more broadly

#### B. Research Objectives:

1. Validate the State-of-the-Art (Are things really "working"??)
2. Understand Romanian Ecosystem - Why things (don't) work (on paper)
3. Share learnings (from Romania) with broader STEM Ed ecosystem
4. Assess Awareness of (Gender in) STEM (Education) in Romania
5. Assess Level of Involvement (DITTO)
6. Assess Perceptions About (DITTO)

#### C. Scope:

1. Definitions: "STEM" , Education, Gender / DEI
2. Target Stakeholders Groups (x2):
  - Students, and
  - Other Ecosystem Actors (Adults):
    1. Practitioners
    2. Public Sector: Teachers et al.
    3. Private Sectors: Tech Sector Employees / Entrepreneurs
    4. Academia: Researchers / Admin / Decision-makers

#### D. Assumptions/Theories to Test:

1. Kids perceptions:
  - STEM is "hard", boring, not for me
  - STEM is a boys' thing
  - Perception about Boys and Girls regarding STEM
2. Adults' perceptions

#### E. Expected Outcomes: Proposal

#### F. Research Approach / Method: Quantitative and Qualitative per Proposal

#### G. Impact on Pedagogy Proposal

#### H. Risks / Managing Risks:

1. Proposal
2. Reaching all stakeholders - (Paper Version)

## **II. Survey Approach**

- A. Background:
  - 1. Should consider Interview Questionnaire while drafting Survey Form
  - 2. Should reflect project/research priorities which include demographic objectives
- B. Respondent Categories (x2)
  - 1. Students - K12? Other? Will require permission/facilitation by adult community/family members
  - 2. Ecosystem Actors, including Teachers and Parents - to be identified by respondent
- C. Architecture
  - 1. Should reflect Research Objectives
  - 2. Short: Max 10 questions per stakeholder group
  - 3. Compelling/interesting to target (incentivizing needed?)
  - 4. Easy to Use and short / easy to complete by respondent
  - 5. Will reach underserved communities - paper? Other media?
  - 6. Language considerations
- D. Other Characteristics:
  - 1. Question Criteria:
    - Address fundamental research factors
    - General and comparable across respondents
    - Impartial to research (don't pre-load answers)
    - Useful AND Meaningful yet General enough to apply to a large and diverse stakeholder group
  - 2. Question Categories (x5):
    - Demographic Data: Gender Identity / Ethnic/Intersectional Other / Age / Location / Socio-economic / Education Level / Language
    - Relationship with Science Technology Engineering Mathematics (Education / Gender/DEI) - Stakeholder Question/s
    - Perceptions of Gender in STEM (Education) in Romania (is there a problem? why?)
    - Factors influencing the "problem" area
    - Actions (I'm taking / Think should be taken) to tackle the problem
    - Interest to be interviewed / followup
  - 3. Data Collection/Retention:
    - Anonymous - unless respondent specifies
    - "Prefer Not to Say" is option
    - Not/Applicable is option
    - GDPR considerations
    - Reaching diverse stakeholder groups
    - Consideration for minors
  - 4. Assumptions about Target Stakeholders:
    - Target: Children in the classroom who are 12-14yo
    - Target has access to tools (for survey, etc.)
    - Target knows what STEM is

**E. Question Samples:**

1. Contact Information and Demographic Data:
  - Optional: Name (First/Last)
  - Optional: Email Address
  - Optional: Phone Number (fixed field w Country Code)
  - Optional: Gender Identity
  - Optional: Ethnic/Intersectional/Other
  - Optional: Language Spoken at Home (second, third)
  - Age
  - Location
  - Socio-economic status (average annual household income?)
  - Level of Education (of Parent/s)
  - Occupation - Industry or "Student" (Student: indicate level)
  - Organization, Title, Number of Years in Role, etc.
2. Relationship / Familiarity with Science Technology Engineering Mathematics (Education / Gender/DEI)
3. Perceptions of *Gender*(1) in *STEM*(2) *Education*(3) in Romania (is there a problem? why?)
4. Factors influencing the "problem" area
5. Actions (I'm taking / Think should be taken) to tackle the problem
6. Interest to be interviewed / followup