Preliminary Report

UNESCO *Gender and STEM Education in Romania Project*

UNESCO Program: *Revitalizing STEM Education to Equip Future Generations with STEM Competency in South-East Europe and the Mediterranean*,
supported by Huawei Technologies

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Document Summary

The present *Preliminary Report* is submitted by the *Digital Leadership Institute* in fulfillment of the first deliverable of the *Gender and STEM Education in Romania* ("GENSTEMED") project with Project Reference *IO11* (Intellectual Output number *IO11*), including the following **Sections** per the Terms of Reference:

1. Updated Project Timeline
2. Project Activities
3. Methodologies Developed for Project Activities
4. Stakeholder Mapping
5. Conclusion

Summary of Tables and Figures

1. Project Timeline

A. Background

The *Gender and STEM Education in Romania* project timeline has been updated to reflect the Terms of Reference and preliminary activities carried out by project partners. The *Project Plan Version 1.0* (Project Reference IO1I) is included as **Annex A** to the present report and a list of *Intellectual Outputs* for the project is extracted in **Tables 1-3**.

B. Description

The project plan contains the spreadsheets noted below, including high-level timing for *Activities* which is further elaborated in Section 2 of this report:

(1) *Meetings:* Timing and contact points for internal project meetings, program-level meetings (asterisked), and a planned onsite monitoring mission;

(2) *Intellectual Outputs & Deliverables: Intellectual Outputs* and *Deliverables* (IOs) for the project are highlighted in **Bold**, key *Milestones* are signified by a *dash and letter*, and *Dependencies* are captured *in parentheses,* along with details on updated *Timing,* and *Lead & Implementing Partner/s* and *KPIs* carried over from the project proposal;

(1) *Tasks / Activities:* Project *Tasks / Activities* are carried over from the project proposal, reflect updated timing, and are elaborated further in **Section 2**;

(2) *Budget* and *Budget Tracker:* The project *Budget* is updated and a *Budget Tracker* by *Deliverable,* per the Terms of Reference, is included in the project plan;

(3) *KPIs: Key Performance Indicators* are carried over from the project proposal, and referenced in the *Project Plan* (IO01) and *Communications Plan* (IO10); and

(4) *Contact Info:* Contact information is included for project team members.

	A	B	C	D	E	F
1	**Intellectual Output / Milestones—*n* / (Dependencies)**	**Description**	**Timing**	**Lead & Implementing Partner/s**	**Performance Indicator # (PI)**	**Target (T)**
2	**IO1**	**Project Management**	**15 Jul 24-12 Mar 25**	**DLI / AFIST**		
3	—a-f	Internal Project Meetings	(monthly x6)	DLI		
4	—g-k	Joint-UNESCO Bi-monthly Meeting Reports	(bi-monthly plus Kickoff & Handover x5)	DLI		
5	—l-s	Project Plan Updates	(monthly plus Kickoff & Handover x8)	DLI		
6	**IO2**	**Surveys (EN, RO, DE)**	**30 Oct 24**	**DLI / AFIST / SG**		
7	—a	Ecosystem Actor Survey Form	15 Sep 24	DLI/AFIST		
8	—b	***Ecosystem Actor Survey Results***	30 Oct 24	AFIST	PI 1. 1.1 Online Survey Respondents	100
9	—c	Student Survey Form	1 Oct 25	DLI/SG		
10	—d	***Student Survey Results I - Pre-Event***	1 Dec 24	SG		
11	—e	Student Survey Results II - Post-Event	15 Feb 25	SG		
12	**IO3**	**Interviews (EN, RO, DE)**	**15 Jan 25**	**DLI / AFIST / SG**		
13	—a	Ecosytem Actor Interview Questionnaire Form	15 Oct 24	DLI / AFIST		
14	—b	Student Interview Questionnaire Form	15 Nov 24	DLI / SG		
15	—c	***Interim Interview Results***	1 Dec 24	AFIST		
16	—d	Interview Results	15 Jan 25	AFIST	PI 1.1.2 Interview Respondents	50
17	**IO4**	**Intermediate Report**	**15 Dec 24**	**DLI / AFIST**	PI 1.1.3 Interim Report Views	10
18	(IO9a)	Methodology	15 Sep 24	DLI		
19	(IO9b)	Stakeholder Mapping	15 Sep 24	DLI		
20	(IO9c)	Desk Research / State-of-the-Art	30 Sep 24	DLI		
21	(IO2b,d,e)	Survey Results	30 Oct 24	AFIST		
22	(IO3d)	Interview Results	15 Jan 25	AFIST		
23	—a	Interim Report Presentation	6 Feb 25	AFIST		
24	**IO5**	**Emerging Tech Workshop**	**26 Mar 25**	**DLI / SG**		
25	—a	Emerging Tech Workshop Curriculum	15 Dec 24	DLI	PI 2.1.1 Workshop curricula	1
26	(IO6a)	Junior Workshop Leader Training	5 Feb 25	DLI / SG		
27	—b	Emerging Tech Workshop Implementation	6 Feb 25	DLI / SG	PI 2.1.2 K-12 Workshop participants	25
28					PI 2.2.2 K-12 Workshop participants	25
29	(IO8)	Emerging Tech Workshop Evaluations	15 Feb 25	DLI		

Table 1: Intellectual Outputs IO1-1O5

	A	B	C	D	E	F
1	**Intellectual Output / Milestones—*n* / (Dependencies)**	**Description**	**Timing**	**Lead & Implementing Partner/s**	**Performance Indicator # (PI)**	**Target (T)**
30	**IO6**	**Emerging Tech TTT Toolkit**	**26 Mar 25**	**DLI**	PI 2.3.1 Train-the-Trainer Toolkit	1
31					PI 2.3.2 Toolkit Access	25
32	(IO5a)	Emerging Tech Workshop Curriculum	15 Dec 24	DLI		
33	(IO8a)	Emerging Tech Workshop Evaluation Form	1 Feb 25	DLI		
34	—a	Junior Workshop Leader Training	5 Feb 25	DLI / SG	P1 2.1.3 K-12 Junior Workshop Leader	1
35					P1 2.2.3 K-12 Junior Workshop Leader	1
36					P1 2.1.4 K-12 Junior Workshop Leader Training participants	5
37					P1 2.2.4 K-12 Junior Workshop Leader Training participants	5
38	(IO8b)	Emerging Tech Workshop Evaluation Results	7 Feb 25	DLI		
39	**IO7**	**Showcase Event**	**6 Feb 25**	**DLI / SG**	PI 1. 2.2 In-person Event Participants - Practitioners	50
40					PI 1. 2.3 Remote Event Participants - Practitioners	100
41					PI 1. 2.4 Asynchronous Event Participants - Practitioners	250
42	—a	Practitioner Panel	15 Nov 24	DLI / AFIST	PI 1. 2.1 Practitioner Panelists	5
43	—b	Role Model Talks	15 Nov 24	DLI / AFIST	PI 2.4.1 Inspiring Role Model Speakers	2
44	(IO3a)	Interim Report Presentation	6 Feb 25	AFIST		
45	(IO5)	Emerging Tech Workshop	6 Feb 25	DLI / SG	PI 2.4.2 In-person Event Participants - K-12	60
46	(IO6)	Emerging Tech TTT Toolkit	26 Mar 25	DLI		
47	(IO8)	Event Evaluations	28 Feb 25	DLI / SG		
48	**IO8**	**Evaluations**	**26 Mar 25**	**DLI / AFIST**		
49	—a	Emerging Tech Workshop Evaluation Form	1 Feb 25	DLI		
50	—b	Emerging Tech Workshop Evaluation Results	7 Feb 25	SG		
51	—a	Event Evaluation Form	1 Feb 25	DLI		
52	—b	Event Evaluation Results	28 Feb 25	DLI / SG		

Table 2: Intellectual Outputs IO6-IO8

	A	B	C	D	E	F
1	**Intellectual Output / Milestones—*n* / (Dependencies)**	**Description**	**Timing**	**Lead & Implementing Partner/s**	**Performance Indicator # (PI)**	**Target (T)**
53	**IO9**	**Final Report**	**26 Mar 25**	**DLI - AFIST / SG**	PI 1.3.1 Report Views	100
54	—a	Methodology	15 Sep 24	DLI		
55	—b	Stakeholder Mapping	15 Sep 24	DLI		
56	—c	Desk Research / State-of-the-Art	30 Sep 24	DLI		
57	(IO2)	Surveys (EN, RO, DE)	30 Oct 24	AFIST		
58	(IO3)	Interviews (EN, RO, DE)	15 Jan 25	AFIST		
59	(IO4)	Interim Report	15 Dec 24	AFIST		
60	(IO5)	Emerging Tech Workshop	26 Mar 25	DLI		
61	(IO6)	Emerging Tech TTT Toolkit	26 Mar 25	DLI		
62	(IO8)	Evaluations	26 Mar 25	SG		
63	—d	Event Report	26 Mar 25	DLI / AFIST / SG		
64	—e	Conclusions & Way Forward	26 Mar 25	DLI		
65	**—f**	**Financial Report**	**26 Mar 25**	**DLI**		
66	**IO10**	**Communications / Outreach**	**15 Jul 24-26 Mar 25**	**DLI - AFIST / SG**		
67	—a-f	Communication Plans	(monthly x6)	DLI		
68	—OOO	Communication Activities	OOO	DLI / AFIST / SG		
69	**IO11**	**Preliminary Report**	**15 Sep 24**	**DLI**		
70	(IO9a)	Methodology	15 Sep 24	DLI		
71	(IO9b)	Stakeholder Mapping	15 Sep 24	DLI		
72	(IO1l)	Project Plan Update	15 Sep 24	DLI		
73						

Table 3: Intellectual Outputs IO8-IO11

C. Project Management

The project plan will be updated and shared with program leadership eight times during the course of the project (IO1l-s).

2. Project Activities

A. Background

Per the Terms of Reference, *Activities* for the *Gender and STEM Education in Romania* project will be managed during the project through regular updates of the Project Plan (IO1) included in **Annex A** herewith. Updated, high-level timing for *Activities* related to *Project Management*, *Communications* (3.1 to 3.7), *Research* (1.1 to 1.7), and *Education* (2.1 to 2.5) is captured in the *Tasks* spreadsheet in the *Project Plan* and in **Table 4**. *Project Activities* linked to *Deliverables* and *Intellectual Outputs* are further described in this section.

Task	Description of the activities	M0	M1	M2	M3	M4	M5	M6	M7
Expected result 1 – STEM Research Activities:		Jul/ Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Activity									
1.1	State-of-the-Art Research and Drafting	X	X	X				X	
1.2	Online Survey - Drafting, Delivery, Result Analysis	X	X	X	X	X	X	X	
1.3	Interview Questionnaires - Drafting, Delivery, Result Analysis		X	X	X	X	X	X	
1.4	Interim Report - Methodology, Preliminary Research Findings with Analysis		X	X	X	X	X	X	
1.5	Showcase Event: Practitioner Panel					X	X	X	
1.6	Student Survey - Drafting, Delivery, Result Analysis						X	X	X
1.7	Final Project Report - Research Findings, Analysis, Recommendations & Way Forward	X	X	X				X	X
Expected result 2 – STEM Educational Activities:									
Activity									
2.1	Student Workshop Curriculum - Development and Delivery		X	X	X	X	X	X	X
2.2	Train-the-Trainer Toolkit - Development and Delivery		X	X	X	X	X	X	X
2.3	Showcase Event: Keynotes, Role Model Talks, Student Awards			X	X	X	X	X	
2.4	Showcase Event: Junior Workshop Leader Trainings						X	X	
2.5	Final Project Report - Student Workshop and Showcase Event Feedback, and Financial Report						X	X	X
Communication and Dissemination									
Activity									
3.1	Highlevel Stakeholder Mapping	X	X						
3.2	Online Survey - Promotion and Outreach	X	X	X	X	X			
3.3	Interview - Promotion and Outreach			X	X	X	X		
3.4	Showcase Event - Promotion and Outreach			X	X	X	X	X	
3.5	Showcase Event - Evaluation and Feedback						X	X	
3.6	Interim Project Report - Promotion & Engagement						X	X	
3.7	Final Project Report - Promotion & Engagement					X	X	X	X

Gantt Chart

Table 4: Project Activity High-level Timing

B. Deliverables

As captured in **Table 4,** over the course of the project, the GENSTEMED team will carry out *Activities* in order to achieve the following *Deliverables* with noted timings:

(1) 15 September 2024 - **First preliminary report (IO11)**: Including a stakeholder mapping (IO9b), an updated timeline (IO1l), activities (IO1l) and methodologies (IO9a) developed for the project activities;

(2) 15 December 2024 - **Intermediate report (IO4)**: Including first findings of the desk research (IO9c), online surveys (IO2b) and interview questionnaire (IO3c);

(3) 26 March 2025 - **Financial Report (IO9f)** and a **Final Report (IO9)** including data and key findings, access to the toolkit (IO6), results of trainings/workshops for educators (IO6a) and learners (IO5), and a report on the Showcase Event (IO7).

C. Intellectual Outputs

In synergy with the foregoing, *Activities* related to the following *Intellectual Outputs*, including internal *Milestones* and *Dependencies* will be carried out against a timeline based on the Terms of Reference, reflecting the timing in **Table 4** and captured in the *Project Plan*:

(1) *15 July 2024 to 26 March 2025 - Project Management (IO1)*: This intellectual output includes regular project meetings and related reporting, including Project Plan (IO1l-s) updates;

(2) *15 September 2024 - Preliminary Report (IO11)*: Per the TOR, the present report is submitted in fulfillment of this intellectual output and includes elements noted above including *Methodology* (IO9a), the *Project Plan* (IO1l), and a preliminary *Stakeholder Mapping* (IO9b) which will all be updated over the course of the project;

(3) *30 October 2024 - Surveys (IO2)*: This intellectual output reflects *Research Activities* undertaken in order to elaborate the Survey, evaluate and select a *Survey Tool*, develop two types of *Survey Forms*, promote and communicate the Surveys, and analyze, synthesize and report on Survey Results;

(4) *15 December 2024 - Intermediate Report (IO4)*: Per the TOR, this intellectual output includes Research Activities related to refining and updating the Research Methodology and providing initial findings from project activities related to the *Desk Research* (IO9c), *Surveys* (IO2) and *Interviews* (IO3);

(5) *15 January 2025 - Interviews (IO3)*: This intellectual output encompasses Research Activities to elaborate the Interview element in the context of the Research Methodology, develop two types of Questionnaire Forms,

promote and communicate Interviews, and analyze, synthesize and report on Interview Results;

(6) *6 February 2025 - Showcase Event (IO7)*: Related to this intellectual output, Educational Activities will be carried out to prepare and deliver the *Emerging Tech Workshop* (IO5), (Junior) *Train-the-trainer* workshop (IO6/ IO6a) with related curricula/materials including the *Toolkit* (IO6), and *Role Model Talks* (IO7b). In addition, *Research Activities* will be carried out related to preparing a *Presentation* (IO3a) of the *Intermediate Report* (IO4), including *Survey* (IO2) and *Interview Results* (IO3), organizing a *Practitioner Panel* (IO7a); and carrying out event *Evaluations* (IO8) and *Communication Activities* (IO10) for the *Showcase Event*;

(7) *26 March 2025 - Emerging Tech Workshop (IO5)*: *Educational Activities* for this intellectual output include developing (IO5a), testing (IO6a), implementing (IO6b) and evaluating (IO8) curriculum and pedagogy related to the *Emerging Technology Workshop* (IO5);

(8) *26 March 2025 - Emerging Tech Train-the-Trainer Toolkit (IO6)*: Educational Activities for this intellectual output include developing (IO5a), testing (IO6a) and evaluating (IO8) curriculum and pedagogy related to the Emerging Tech Train-the-Trainer Toolkit (IO6);

(9) *26 March 2025 - Evaluations (IO8)*: Activities related to Evaluation of the Showcase Event include developing a *Workshop Evaluation Form* (IO8a) and an *Event Evaluation Form* (IO8c), and processing and reporting on *Results* from these *Evaluations* (IO8b and IO8d) in the *Final Report* (IO9);

(10) *26 March 2025 - Final Report (IO9)*: This intellectual output represents the culmination of unique project Research and Educational Activities related to Methodology (IO9a), Stakeholder Mapping (IO9b), Desk Research (IO9c), an Event Report (IO9d), Conclusions and a Way Forward (IO9e), and a Financial Report (IO9f). It embraces Activities reflected in other dependencies including the present Preliminary Report (IO11), Surveys (IO2), Interviews (IO3), the Interim Report (IO4), Emerging Tech Workshop (IO5), Emerging Tech TTT Toolkit (IO6), Evaluations (IO8), including the Showcase Event (IO7), and project Communications Activities (IO10);

(11) *26 March 2025 - Financial Report (IO9f)*: Per the Terms of Reference, tracked within the Project Plan Budget / Budget Tracking spreadsheets, a Financial Report (IO9f) for the project will be submitted with the Final Report (IO9) including justification for financial outlays supported with Time tracking (*Timesheet Template* in **Annex B** herewith) and Invoices for Material outlays; and

(12) *15 July 2024 to 26 March 2025 - Communications / Outreach (IO10)*: This intellectual output includes ongoing *Communication Activities* in the project and regular updates to the *Communication Plan* (IO10a-f) which includes KPIs for key intellectual outputs carried over from the project proposal.

CA #	Task #	Project Milestone	Category	KPIs: Performance Indicator (PI)*	KPIs: Source and means of verification (M)	KPIs: Target (T)	Action	Messaging / Assets	Target Stakeholders	RACI	Timing	Channel	Partner	Impact	Notes
1		Project Launch / Awardees	Online Engagement				Website Article	https://www.unesco.org/en/articles/revitalizing-stem-education-europe	General Public	I	7/10/2024	Website	UNESCO		https://bit.ly/RevitalizingSTEMawardees
2		"	Online Engagement				Linkedin Post		General Public	I	7/11/2024	LinkedIn	DLI	7/15: 1000 Impressions, 3 reposts, 24 reactions, 2 comments	
3		"	Online Engagement				Linkedin Post		General Public	I	7/12/2024	"	AFIST	1,107 Impressions Comment 1 reposts 8	
4	3.1		Highlevel Stakeholder Mapping				Map Stakeholders		Project Stakeholders						
5			Project Website				Design & Deploy Project Website		Project Stakeholders						
6		"	UNESCO Tender Website				Drive viewers & promote	https://www.unesco.org/en/articles/unesco-and-huawei-technologies-embark-transformative-journey-reinvigorate-stem-education	ALL		29/7/2024				
			UNESCO Program Website					https://www.unesco.org/en/articles/revitalizing-stem-education-equip-next-generations-stem-competency?hub=66976							https://bit.ly/RevitalizingSTEM
7		"	UNESCO YouTube Video				Drive viewers & promote	https://www.youtube.com/watch?v=x2_BG9dHk18	ALL		29/7/2024				https://bit.ly/RevitalizingSTEMvideo
8		"	Huawei Website					https://www.huawei.com/en/							https://bit.ly/HuaweiSTEM TECH4ALL: https://www.huawei.com/en/tech4all
9		"	DLI Website Article					DLI Lands UNESCO STEM and Gender Project							https://bit.ly/DLIGenSTEMed
10			Survey Tool				Survey Comms Channel	http://www.typeform.com							
11			Survey Outreach				Survey Teaser Info	OOO - from Project Proposal							https://drive.google.com/file/d/1KsigMnZigwMwgjEklrM4QKsDFLc8nV6x/view?usp=drive_link
12							Teaser Video	Hermann Oberth Video (1929): Woman on the Moon - Frau							Woman in the Moon (1929) — The Movie Database (TMDB) (themoviedb.org)
13							Survey Background Article	Project background, objectives, activities, etc.	ASPnet, UNESCO				AFIST		
		Expected Result 1 STEM Research Activities:													
	3.2	Output N°1: Interim Project Report on Gender and STEM Education in Romania	Online Survey - Promotion and Outreach	PI 1. 1.1 Online Survey Respondents	Survey link traffic	100									
	3.3		Interview - Promotion and Outreach	PI 1.1.2 Interview Respondents	Interviews conducted	50									
	3.6		Interim Project Report - Promotion & Engagement	PI 1.1.3 Interim Report Views	Report link traffic	10									
	3.4	Output N°2: Showcase "Gender and STEM Education in Romania" Event (Practitioners)	Showcase Event - Promotion & Outreach	PI 1. 2.1 Practitioner Panelists	Event program / website	5	Speaker Invitations				11/24				CM
				PI 1. 2.2 In-person Event Participants - Practitioners	Event attendees list	50									
				PI 1. 2.3 Remote Event Participants - Practitioners	Zoom participants	100									
				PI 1. 2.4 Asynchronous Event Participants - Practitioners	Video views within 6 months of Event	250									
	3.7	Output N°3: Final Project Report on Gender and STEM Education in Romania	Final Project Report - Promotion & Engagement	PI 1.3.1 Report Views	Report link traffic	100									
		Expected Result 2 STEM Educational Activities:													
	3.4	Output N°1: Student Workshop on Emerging Technology A	Showcase Event - Promotion & Outreach	PI 2.1.1 Workshop curricula	Project submission	1									
				PI 2.1.2 K-12 Workshop participants	Event attendees list	25									
				P1 2.1.3 K-12 Junior Workshop Leader Training	Event attendees list	1									
				P1 2.1.4 K-12 Junior Workshop Leader Training	Event attendees list	5									
	3.4	Output N°2: Student Workshop on Emerging Technology B	Showcase Event - Promotion & Outreach	PI 2.2.1 Workshop curricula	Project submission	1									
				PI 2.2.2 K-12 Workshop participants	Event attendees list	25									
				P1 2.2.3 K-12 Junior Workshop Leader Training	Event attendees list	1									
				P1 2.2.4 K-12 Junior Workshop Leader Training	Event attendees list	5									
		Output N°3: Train-the-Trainer Toolkit	TTT Toolkit - Promotion & Engagement	PI 2.3.1 Train-the-Trainer Toolkit	Project submission	1									
				PI 2.3.2 Toolkit Access	Toolkit link traffic	25									
	3.4	Output N°4: Showcase "Gender and STEM Education in Romania" Event (K-12 Students)	Showcase Event - Promotion & Outreach	PI 2.4.1 Inspiring Role Model Speakers	Event program / website	2									
				PI 2.4.2 In-person Event Participants - K-12 Students	Event attendees list	60									
	3.5		Showcase Event - Evaluation & Feedback												

Table 5: Communication Plan

D. Communication Activities

Communication Activities are highlighted in **Table 5** for further elaboration with Program leadership in order to accommodate project dissemination, engagement and outreach activities beyond those currently linked with intellectual outputs and KPIs in *Communication Plan* (IO10a). This intellectual output is also included as **Annex C** to the present report.

3. 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*.[1] Details related to this approach are included in the present section.

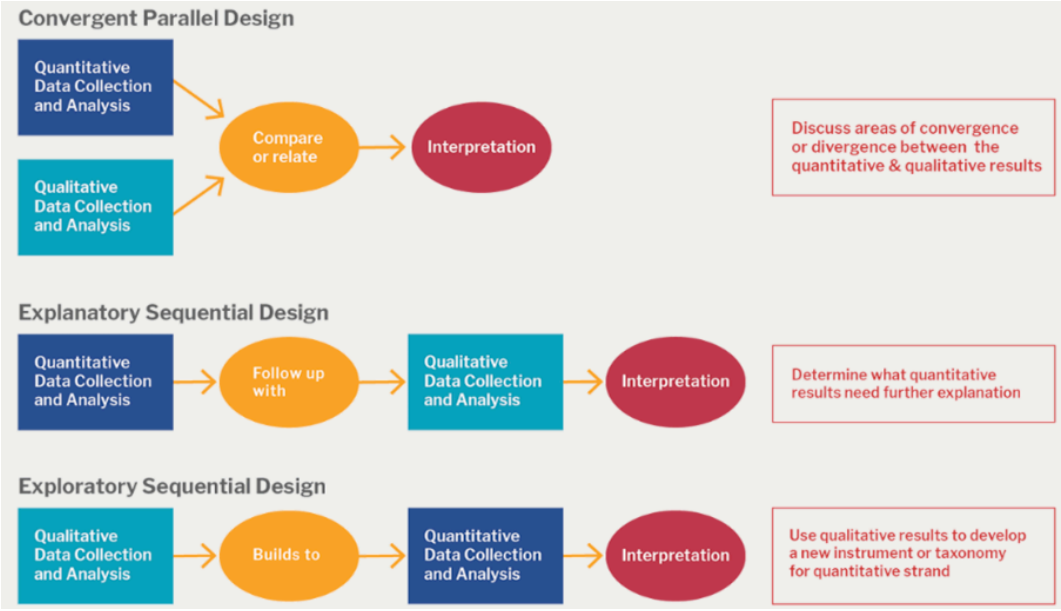


Figure 1: Mixed Method Approach

(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.

[1] 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 Educational Activities of the project.

c. *Research Steps*: Respecting the project's quantitative research methodology, project partners will carry out the following steps:[2]

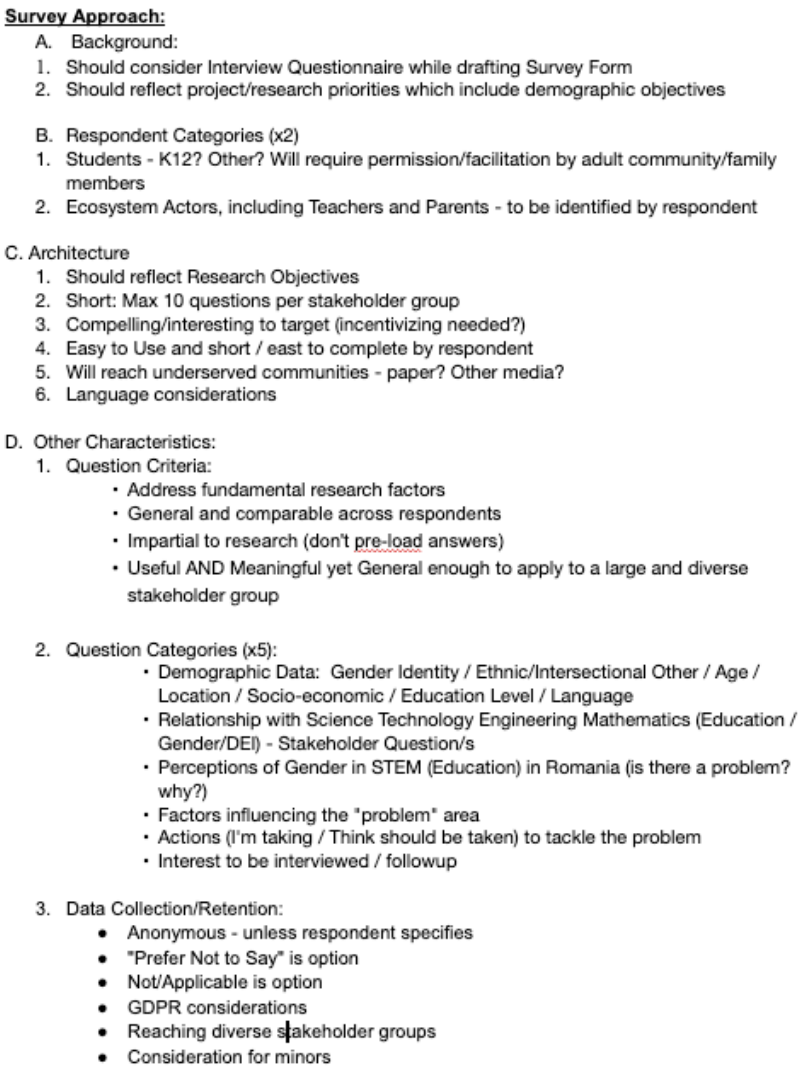
i. *Theory*: Define problem area and postulate research question.
ii. *Hypothesis*: Develop a hypothesis based on the research question.
iii. Research Design: Select appropriate quantitative research design including sample size, research sites, etc.
iv. *Data Collection*: Collect data based on the foregoing.
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;

[2] 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.



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 / east 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

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*[3] 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,[4] 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.[5,6]

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

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

[5] Qualitative vs quantitative research, *ibid.*

[6] 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

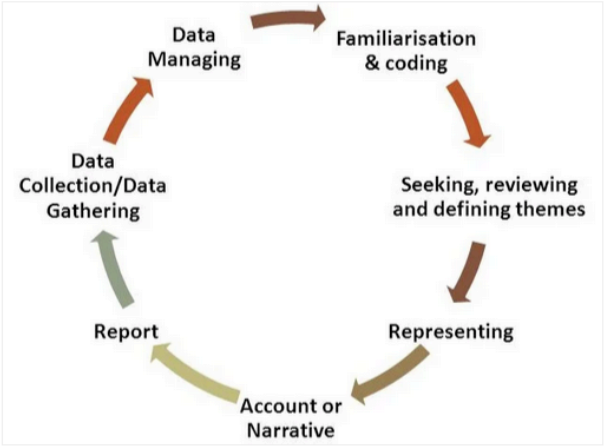

Figure 3: Sample Thematic Analysis - credit: Simply Psychology

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** and included as part of the *Methodology v1.0* as **Annex D** to this report.

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);

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-germana.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 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

4. Stakeholder Mapping

A. Background

Per the Terms of Reference, the GENSTEMED project team has carried out a preliminary *Stakeholder Mapping* (IO9b) which is included as Annex E to the present report, and an Overview of which is excerpted in **Table 6**.

B. Structure

The Stakeholder Mapping includes the following elements:

(1) *RACI*: Project designation utilizing a RACI approach to indicate how the Stakeholder is projected to engage with the project per key project *Deliverable*, including the following:
   a. **R - Responsible:** Roles produce deliverables;
   b. **A - Accountable:** Roles check the deliverables;
   c. **C - Consulted:** Roles advise on tasks;
   d. **I - Informed:** Roles are kept informed throughout the process; or
   e. **N/A - Not Applicable:** Or no role designated.

(2) *Geography*: Geographic location of the Stakeholder in order to help define method and channel for engaging them in the project, including the following:
   a. **All:** Any geography or Unspecified / Unknown;
   b. **International:** Global presence;
   c. **Regional - EU:** European Union or European;
   d. **Regional - SEE / Med:** South-East Europe and Mediterranean countries;
   e. **National - Romania:** Romania;
   f. **Local - Bucharest:** Bucharest and vicinity;
   g. **Local - Romania Other:** Other regions or urban centers of Romania(*);
   h. **National - Belgium:** Belgium; and
   i. **Local - Brussels:** Brussels region and vicinity.

(3) *Stakeholder Category*: Highest order classification of Stakeholders which aligns with project objectives for Communication, Research and Educational Activities, and includes the following:
   a. **Gray:** Program and Project-level Stakeholders, including:
      i. Program Leadership - UNESCO and Huawei
      ii. Program Member - Other projects and organizations in the *Revitalizing STEM* Program
      iii. Project Partner - GENSTEMED Project team members
   b. **Green:** Ecosystem Actors, except Students, including:
      i. School - Admin
      ii. Academia

iii. NGO / Nonprofit
iv. Teachers
v. Parent / Family Organizations
vi. Public Sector Other
vii. Corporate
viii. Startup
ix. Union
x. Media
xi. Private Sector Other
xii. Ecosystem Other

c. **Blue:** Students, including:
i. Students - Primary
ii. Students - Secondary
iii. Students - Post-Secondary

(4) *Organization / Network*: Highest order unique identifier for an organization or network in the Stakeholder Mapping;

(5) *Target Stakeholders / Beneficiaries*: Subset of the Organization / Network, lower order identifier for Stakeholders in order to accommodate more targeted engagement with an organization or beneficiary of the project;

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Project Deliverables (Responsible, Accountable, Consulted, Informed*)									Geography	Stakeholder Category	Organization / Network	Target Stakeholders / Beneficiaries	Contact Org / Person	Notes
2	Project Plan	Comms Plan	Stakeholder Map	Survey	Interviews	Int Report	Workshop	Event	Final Report		Red=Key; Green=Ecosystem; Blue=Student				
3	C	C	C	C	C	C	C	C	C	Regional - SEE / Med	Program Leadership	UNESCO Region SC Europe	UNESCO Region SC Europe		https://www.unesco.org/en/articles/revitalizi
4	C	C	C	I	I	I	C	C	C	National - Romania	Program Leadership	Huawei Public Affairs Romania			
5	A	A	A	A	A	A	A	A	A	National - Belgium	Project Partner	DLI			
6	C	C	C	R	R	R	C	R	R	National - Romania	Project Partner	AFIST			
7	C	C	C	C	C	C	R	R	R	Local - Bucharest	Project Partner	SG HO			
8	N/A	N/A	N/A	I	I	I	I	I	I	Regional - EU	Program Member	TechBridge			
9	N/A	N/A	N/A	I	I	I	I	I	I	Regional - EU	Program Member	INFIM			
10	N/A	N/A	N/A	I	I	I	I	I	I	Regional - SEE / Med	Program Member	UMalta			
11	N/A	N/A	N/A	I	I	I	I	I	I	Regional - SEE / Med	Program Member	MOE Malta			
12	N/A	N/A	N/A	I	I	I	I	I	I	Regional - SEE / Med	Program Member	Ss. Cyril and Methodius University			
13	N/A	N/A	N/A	I	I	I	I	I	I	International	Program Leadership	UNESCO HQ	UNESCO Women for Ethics in AI Pl	AFIST	
14	N/A	N/A	N/A	I	I	I	I	I	I	International	Program Leadership	UNESCO Education	UNESCO INRULED (Beijing)	DLI	
15	N/A	N/A	N/A	I	I	I	I	I	I	International	Program Leadership	UNESCO HQ Other			
16	N/A	N/A	N/A	I	I	I	I	I	I	Regional - EU	Program Leadership	UNESCO EU			
17	N/A	N/A	N/A	I	I	I	I	I	I	Regional - EU	Program Leadership	Huawei EU			
18	N/A	N/A	N/A	I	I	I	I	I	I	Regional - SEE / Med	Program Leadership	(UNESCO SEE) STEM Alliance	STEM Alliance	DLI	
19	N/A	N/A	N/A	I	I	I	I	I	I	Regional - SEE / Med	Program Leadership	Huawei SEE			
20	N/A	N/A	N/A	C	I	I	I	I	I	National - Romania	Program Leadership	UNESCO Romania	CNR UNESCO	SG HO	CNR UNESCO (cnr-unesco.ro)
21	N/A	N/A	N/A	C	I	I	I	I	I	International	Program Leadership	ASPNET		UNESCO	
22	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Program Leadership	Huawei Romania - Other			
23	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	Public Sector Other	Ministry of Education Romania		CNR UNESCO/SGHO/AFIST	
24	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	Public Sector Other	Ministry of Foreign Affairs Romania		CNR UNESCO/SGHO/AFIST	
25	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	Public Sector Other	Ministry of the Economy (Employment, Startup)		CNR UNESCO/SGHO/AFIST	
26	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	Program Member	Ministry of the Interior / Home Affairs / Welfare		CNR UNESCO/SGHO/AFIST	
27	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	Public Sector Other	Ministry of Family and Gender		CNR UNESCO/SGHO/AFIST	
28	N/A	N/A	N/A	C	C	I	I	I	I	Local - Bucharest	Academia	Bucharest University		SG HO	
29	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	Academia	Faculty of Education			
30	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	Academia	Faculty of Science			
31	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	Academia	Faculty of Physics		AFIST	
32	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	Students - Post-Se...	Student STEM Unions/Faculty Groups/Associations			
33	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Academia	National University of Political Studies & Public Administration			
34	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	Academia	Other Universities - Romania		SG HO	
35	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	NGO / Nonprofit	Goethe Institute Romania		SG HO	
36	N/A	N/A	N/A	C	C	I	I	I	I	National - Romania	NGO / Nonprofit	Alliance Francaise		SG HO	
37	N/A	N/A	N/A	C	C	I	I	I	I	Local - Romania Ot...	School - Admin	Partner Schools - Administrators		SG HO	Middle & High Schools especially
38	N/A	N/A	N/A	C	C	I	I	I	I	Local - Romania Ot...	Teachers	Partner Schools - Teachers		SG HO	
39	N/A	N/A	N/A	C	C	I	I	I	I	Local - Romania Ot...	Students - Second...	Partner Schools - Students Secondary		SG HO	
40	N/A	N/A	N/A	C	C	I	I	I	I	Local - Romania Ot...	Students - Primary	Partner Schools - Students Primary		SG HO	
41	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Association	Atomic Chemistry Network		SG HO	
42	N/A	N/A	N/A	I	I	I	I	I	I	Local - Romania Ot...	Parent / Family Org	Parent-Teacher Associations		SG HO	
43	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	School - Admin	County School Inspectors		CNR UNESCO/SGHO	
44	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Private Sector Other	Extreme Light Infrastructure-nuclear physics (ELI-NP)		AFIST	
45	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Academia	Politehnica University of Bucharest,		AFIST	
46	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Private Sector Other	Nuclear Electrica		AFIST	
47	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Academia	Babeș-Bolyai University,		AFIST	
48	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Startup	CONAF , National Confederation for Female Entrepreneurship,		AFIST	
49	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Students - Post-Se...	UNSR - National Union of Students from Romania,		AFIST	
50	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Association	MED – Medical Engineering Development Association,		AFIST	
51	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Students - Post-Se...	AS POLI - Association of Students from UPB		AFIST	
52	N/A	N/A	N/A	I	I	I	I	I	I	National - Romania	Academia	Bucharest Polytechnic University- UNESCO Chair;		AFIST	

Table 6: Stakeholder Mapping v1.0

(6) *Contact Person / Organization*: Project Internal and External contacts *at the organizational level*(**) who facilitate connection to named *Organization / Network* and/or *Target Stakeholder / Beneficiaries.*

(*) Geographic Specificity: This classification could also include Regions in Romania in order to support optimal national engagement for project Activities.

(**) Privacy and Data Protection: As a policy, the project will not identify individual Stakeholder persons and will not use or retain private data. Instead, the project will rely on GDPR and privacy and data protection policies practiced by project stakeholders to facilitate engagement. At the lowest order, the Stakeholder Mapping will identify either internal project partner organizations or actors external to the project who will fill the role of *Contact Person / Organization* to facilitate engaging a specific Target Stakeholder, Beneficiary, Organization and/or Network.

C. Logic

The Stakeholder Mapping is a critical instrument for successfully carrying out the Activities of the project and for achieving project Objectives, including KPIs, and it therefore should reflect certain criteria, including the following:

(1) *Living/Evolving:* The present Stakeholder Mapping is an initial snapshot of project stakeholders as identified in the earliest stages of the project. Through project activities, greater awareness of the stakeholder ecosystem will be achieved and on this basis, the Stakeholder Map will be further populated, elaborated and refined, including with the “placeholder" tabs for specific stakeholder groups. Continuously capturing and updating project knowledge of the stakeholder ecosystem will be critical in successfully engaging stakeholders across the lifetime of the project.

(2) *Linked to other Maps*: The present Stakeholder Mapping is linked to existing stakeholder maps that are the exclusive purview of internal and external stakeholder partners who are included in the initial mapping exercise and will contribute to successfully executing project activities.

(3) *Necessary and Sufficient*: The living and evolving nature of the Stakeholder Mapping dictates that the information it contain be necessary to the tasks defined in the project and sufficient to that purpose—nothing more or less. Throughout the project, partners will seek to maintain this balance between having enough stakeholder information to achieve project goals, but not so much that the stakeholder map itself becomes too unwieldy to be useful.

(4) *Respecting GDPR, Privacy and Data Protection*: GDPR, Romanian and other privacy and data protection regulations will impact the scope of project work in that no more detail will be captured, utilized or retained in the *Stakeholder Map*, or anywhere in the project, than is necessary to

facilitate achieving project objectives while respecting regulation. This point will be most strictly enforced where data about minors and their ecosystem is concerned, as is a unique concern in the project.

(5) *Program Leader Dialogue*: Related to the foregoing, the Stakeholder Mapping will also provide the basis for an ongoing dialogue between the project team and Program Leadership, specifically regarding ways to continue populating and refining the Stakeholder Map in order to continue to achieve project objectives while still effectively navigating the constraints outlined here.

D. Usage

The Stakeholder Mapping will be used in the project to achieve explicit and implicit project objectives that are reflected in its logic and structure, notions of which are captured the Stakeholder Mapping "Logic" spreadsheet and excerpted in **Table 7**.

Interviews	Survey	Stakeholder Group
15	15	Educators
	5	Future Educators
	10	Academia
10	20	Students
25		**Ecosystem Actors**
	10	Parents
	8	Policy Makers
	10	Corporate Decision-makers
	2	Startup Funders / VCs
	20	STEM Practitioners
50	**100**	**TOTALS**

Table 7: Target Respondents for Research Activities by Stakeholder Group

(1) *Explicit Objectives*: The stakeholder map captures information required for successful execution of key Activities outlined in the project plan, for achieving specific project Targets including KPIs, and for attaining project Objectives, including related to Project Management, Research, Educational and Communication Activities.

   a. *Research Activities*: The Stakeholder Mapping will be used to carry out project *Research Activities*, including the following:
      i. **Methodology: Defining** which stakeholders will be engaged to achieve the Research Objectives, how they will be targeted and reached through the Research Activities of the project, and with what expected outcomes versus actual outcomes;
      ii. **Design** of the Surveys, Interview Questionnaires, and Evaluations;
      iii. **Drafting and Disseminating** Research Reports; and
      iv. **Outreach and Engagemen**t for Surveys, Interviews, the Showcase Event, and other Research Activity milestones.

   b. *Educational Activities*: The Stakeholder Mapping will be used to carry out project *Educational Activities*, including the following:
      i. **Methodology: Defining** which stakeholders will be engaged to achieve the Research Objectives related to Educational Activity Objectives, how they will be targeted and reached through the Educational Activities of the project, and with what expected outcomes versus actual outcomes;
      ii. **Design** of the Emerging Tech Workshop, TTT Toolkit and Evaluations;
      iii. **Drafting and Disseminating** Educational Activity Reports and the TTT Toolkit; and
      iv. **Outreach and Engagement** for Workshops, (Junior) Train-the-Trainer Workshop, the Showcase Event and other Educational Activity milestones.

   c. *Communication Activities*: The Stakeholder Mapping will be used to carry out project *Communication Activities,* in order to achieve related KPIs, as captured in the *Communication Plan* included as **Annex C** herewith, and excerpted in **Table 5**.
      i. Related to *Research Activities*: Please see *Drafting and Disseminating* and *Outreach and Engagement* activities noted above;
      ii. Related to Education Activities: Please see *Drafting and Disseminating* and *Outreach and Engagement* activities noted above;
      iii. Related to *Project Management Activities*: Various activities related to promoting the project and its outcomes will be carried out during the project that will also make use of the Stakeholder Mapping to target, reach and engage project stakeholders.

(2) *Implicit Objectives*: In addition to the explicit objectives of the project, the Stakeholder Mapping will be used to define, validate and cross-check implicit

objectives of the project, particularly around its Research Objectives and both Research and Educational Activities. These include, among other things, reaching stakeholders from diverse linguistic, ethnic and socio-economic backgrounds, from rural environments, migrant families, and otherwise underserved communities who may not otherwise be identified and treated in such efforts.

5. Conclusion

With the present, the *Gender and STEM Education in Romania* project provides an initial description of the four areas addressed in the project's *Preliminary Report*, including the *Project Timeline*, *Activities*, *Methodologies* and *Stakeholder Mapping*, in fulfillment of the first Deliverable, intellectual output number IO11, of the project.

List of Annexes

Annex A: Project Plan v1.0 - IO1l

Annex B: Project Timesheet Template v1.0 (no IO reference)

Annex C: Communication Plan v1.0 - IO10

Annex D: Methodology v1.0, including Survey Approach - IO9a

Annex E: Stakeholder Mapping v1.0 - IO9b