

# Evaluation of the Inter-American Teacher Education Network – Phase IV

**FINAL REPORT | JUNE 2022**



# Acronyms

CIDI	Inter-American Council for Integral Development
CX	Cooperation Exchange
DAC	Development Assistance Committee
DHDEE	Department of Human Development, Education and Employment
DPMO	Department of Procurement Services and Management Oversight
ECE	Early Childhood Education
FEDIAP	Foundation for Education and Development for Rural Areas and its People
HNS	Health of the Network Survey
IRB	Institutional Review Board
ITEN	The Inter-American Teacher Education Network
Logframe	Logical Framework
M&E	Monitoring and Evaluation
MoE	Ministry of Education
MOOC	Massive Open Online Course
NGO	Non-Governmental Organization
NTL	National Training Library
OAS	Organization of American States
OECD	Organisation for Economic Co-Operation and Development
PAEC	Partnerships Program for Education and Training
PD	Professional Development
PT	Project Team
RPPI	Report on Progress of Project Implementation
SDG	Sustainable Development Goal
SG	Seed Grant

<b>SKN</b>	Saint Kitts and Nevis
<b>STEM</b>	Science, Technology, Engineering, and Mathematics
<b>STEAM</b>	Science, Technology, Engineering, Arts and Mathematics
<b>STLS</b>	Science Teacher Leadership Survey
<b>STPSA</b>	Science Teaching Practices Self-Assessment
<b>STREAM</b>	Science, Technology, Reading, Engineering, Arts and Mathematics
<b>SVG</b>	Saint Vincent and The Grenadines
<b>T&amp;T</b>	Trinidad and Tobago
<b>ToC</b>	Theory of Change
<b>ToR</b>	Terms of Reference
<b>TVET</b>	Technical and Vocational Education and Training
<b>UFE</b>	Utilization-Focused Evaluation
<b>UNEG</b>	United Nations Evaluation Group
<b>US</b>	United States
<b>Utech</b>	University of Technology (Jamaica)
<b>UWI</b>	University of the West Indies

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# Contents

<b>1. INTRODUCTION .....</b>	<b>1</b>
<b>2. PROJECT OVERVIEW .....</b>	<b>1</b>
<b>3. EVALUATION PROCESS.....</b>	<b>2</b>
<b>4. KEY FINDINGS .....</b>	<b>4</b>
4.1 Effectiveness .....	4
4.1.1 Activity Achievement .....	4
4.1.2 Output 1 .....	6
4.1.3 Output 2 .....	13
4.1.4 Output 3 .....	18
4.1.5 Output 4 .....	23
4.1.6 Implementation of ITEN III Evaluation Recommendations .....	23
4.2 Program Design and Management .....	25
4.2.1 Alignment of ITEN design with global, regional, and national priorities.....	26
4.2.2 Management of ITEN Project .....	28
4.3 Gender Integration .....	32
4.3.2 ITEN Efficiency.....	34
4.4 Results Sustainability .....	35
4.5 Cost-Benefit Analysis .....	36
<b>5. CONCLUSIONS AND OBSERVATIONS .....</b>	<b>40</b>
5.1 A comprehensive and successful program with an uncertain future .....	40
5.2 Recommendations .....	41

# Figures

Figure 1	ITEN IV Benefits.....	39
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## Tables

Table 3.1	Categories of stakeholders consulted .....	3
Table 3.2	Number of ITEN beneficiaries (by country) interviewed .....	3
Table 4.1	Activity Achievements.....	4
Table 4.2	Summary Indicators linked to Output 1.....	6
Table 4.3	How ministries strengthened the capacities of teachers after engaging in ITEN.....	7
Table 4.4	How educational institutions (beyond ministries) strengthened the capacities of teachers after engaging in the ITEN.....	8
Table 4.5	Summary Indicators linked to Output 2.....	13
Table 4.6	Degree of Achievement of Output 3.....	18
Table 4.7	ITEN approved professional development offerings included in SG portfolios.....	19
Table 4.8	Degree of Achievement of Output 4.....	23
Table 4.9	Degree of Incorporation of ITEN III Evaluation into Design of ITEN IV .....	24
Table 4.10	Assessing ITEN IV Results Indicators .....	31

## Vignettes

Vignette 1	Strengthening STEM Capacities among Rural Teachers .....	10
Vignette 2	Girls in STEM: An Inclusive Early Education .....	11
Vignette 3	Sowing STEAM-HM .....	12
Vignette 4	Mentoring Program on STREAM.....	15
Vignette 5	Laboratory Practice Workshops in Chemistry and Physics .....	15
Vignette 6	Promoting STEM in Early Childhood Teachers.....	16
Vignette 7	Empowered Teachers: The Development of Logical Numerical and Scientific Thinking in Primary Education.....	20
Vignette 8	Getting Moengo STREAM-ing .....	21
Vignette 9	STEM Environment: Creating Experiences in the Classroom.....	22
Vignette 10	Stem as a Priority in Education in the LAC Region .....	26
Vignette 11	ITEN Well Aligned with LAC Regional Priorities .....	28

## Appendices

Appendix I	Terms of Reference .....	44
Appendix II	Evaluation Framework.....	53
Appendix III	Documents Consulted .....	60
Appendix IV	List of People Interviewed.....	<b>Error! Bookmark not defined.</b>
Appendix V	Sample Interview Protocol .....	62
Appendix VI	Logical Framework Matrix.....	65

# 1. Introduction

We are pleased to present a final report to the Department of Procurement Services and Management Oversight (DPMO) of the Organization of American States (OAS) and the United States (US) mission to the OAS, for the evaluation of the Inter-American Teacher Education Network (ITEN) project, Phase 4. As per the Terms of Reference (ToR) presented in [Appendix I](#), the draft Final Report builds on feedback received on the Midterm Report in May 2022 and reflects data collection and analysis conducted since then.

The final report is organized as follows:

- Section 2 presents the ITEN IV project
- Section 3 describes the evaluation methodology
- Section 4 introduces key findings organized along the structure of the Evaluation Framework approved in the Workplan and presented in [Appendix II](#).
- Section 5 provides a conclusion and some recommendations for the future.

## 2. Project Overview

The Americas are faced with the ongoing and increasing challenge of achieving quality education for all. Quality (of education and of teacher) access to education and equity remain serious challenges across the region, despite progress made in access to primary and secondary education in recent years. The OAS ITEN project has focused on building the capacities of teachers as key leverage to improve quality of education.

Started in 2004,<sup>1</sup> the ITEN is a network of individuals from different sectors throughout the Americas, who are involved or interested in the teaching profession. The ITEN aims to contribute to the improvement of the quality of education in the Americas through the promotion of three streams of work, notably: 1) knowledge exchange; 2) capacity building; and 3) technical assistance, using virtual tools and in-person activities. The ITEN works with two main target audiences: K-12 teachers and officials of Ministries of Education responsible for teacher policies.

The fourth phase of the ITEN project (execution period November 2018 to November 2021) has received funding from the US Government (US\$2,499,852.90) and in-kind contribution from the OAS (US\$275,040.60) for a total budget of US\$2,774,893.50, with the view of delivering the following outputs: 1) Use of ITEN's collaborative mechanisms to identify or implement potential solutions to a common challenge of policy or practice in STEM teacher education by MoEs; 2) Provision of a 2-year experience of online and face-to-face professional development in STEM that takes into consideration issues surrounding equitable participation of girls and women in STEM; 3) Increased

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<sup>1</sup> Referred to as the Hemispheric Project on Teacher Education

provision of quality STEM professional development to teachers; and 4) Project planning and monitoring and evaluation. The objective of the ITEN Phase 4 is to increase capacity of education leaders to work collaboratively to implement solutions to shared problems of policy or practice in STEM teacher education in early childhood and secondary levels.

### 3. Evaluation Process

The evaluation began in January 2022 and, further to the submission of the Inception Report, data collection commenced in early February 2022 and ended in May 2022, with ongoing analysis during the past three months. In early May 2022, the evaluation team presented a midterm report to DPMO and made a presentation of preliminary findings (based on data analyzed until 31 March 2022) to DPMO, ITEN Team. A subsequent presentation of preliminary findings was made to the donor on 26 May 2022. In compliance with the methodology described in the Inception Report, data was collected through document review and through individual and group interviews conducted virtually. The evaluation team reviewed the ITEN project profile and project document, all Reports on Progress of Project Implementation (RPPI) (from November 2018 to November 2021), updates on all ITEN indicators used throughout the execution as well as other documents derived from project implementation; for instance, relevant workshop content, various surveys administered by the ITEN team to measure progress,<sup>2</sup> as well as other documentation relevant to the project such as research done on STEM education, regional education strategies, and the OAS Strategic Plan. A list of documentation examined for this assignment is presented in [Appendix III](#)

As presented in [Table 3.1](#), the evaluation team interviewed a total of 55 stakeholders (37 women and 17 men) including representatives from 22 institutions and 22 Teacher Fellows. The full list of people interviewed as of 31 May 2022 is presented in **Error! Reference source not found..**

Further to feedback received on the Midterm Report, the evaluation team held additional consultations with the ITEN team to gain further insights into its vision for the project's future.

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<sup>2</sup> The Health of the Network Survey



**Table 3.1** Categories of stakeholders consulted

TYPE OF STAKEHOLDER	NUMBER
OAS (excluding ITEN team)	5
ITEN project team	5
US Permanent Mission to the OAS	1
Local and national institutions (Ministries, Civil Society Organizations, from participating countries, Regional Organizations)	22
Teacher Fellows, school principals and other beneficiaries	22
<b>TOTAL NUMBER OF RESPONDENTS</b>	<b>55</b> <b>(38 WOMEN 17 MEN)</b>

All stakeholder consultations were guided by interview protocols in English and Spanish adapted to the group interviewed. These groups included respondents who had engaged in the ITEN project either through project teams (thus, often multi-country teams), or seed grants, etc. [Appendix V](#) presents an example of a protocol.

**Table 3.2** Number of ITEN beneficiaries (by country) interviewed

COUNTRY	TOTAL INTERVIEWEES	COUNTRY	TOTAL INTERVIEWEES
Argentina	2	Dominican Republic	3
Costa Rica	2	Venezuela	1
Colombia	7	El Salvador	1
Chile	1	Peru	1
Mexico	2	Grenada	1
St. Kitts and Nevis	1	Paraguay	3
Suriname	1	Trinidad and Tobago	2
United States	5	Brazil	1
Jamaica	7	Bahamas	1
Guatemala	2		

The sampling methodology—described in the Inception Report—allowed the evaluation team to interview beneficiaries who had collaborated on joint activities (either project teams or seed grant recipients), across countries and/or across institutions, which led to very productive sessions that lasted between one hour and one hour and 30 minutes. As illustrated in Tables 3.1 and 3.2 above, the team was able to engage with beneficiaries from Member States from the Caribbean and from Latin America, and from distinct categories of institutions (ministries, civil society organizations,

academic institutions, foundations, etc.). With the support of the DPMO and of the ITEN team, interviews were scheduled very swiftly, and no serious issues emerged during data collection.

## 4. Key Findings

### 4.1 Effectiveness

This section examines results (outputs) achieved by the ITEN IV program as of November 2021. The ITEN program aimed at reaching four outputs: First, that participating MoEs use ITEN's collaborative mechanisms to identify potential solutions to a common challenge in STEM education; Second, that a community of ITEN Teacher Fellows increase their capacities in quality STEM teaching (competency and self-efficacy), particularly in physics and the early childhood and secondary levels; Third, that MoEs increase their provision of quality STEM professional development to teachers; and Finally, that the ITEN program be planned, monitored, and evaluated according to plans.

#### 4.1.1 Activity Achievement

Prior to assessing outputs,<sup>3</sup> it is worth noting that, as presented in Table 4.1 below, the ITEN team has conducted all its planned activities with a high degree of success. Feedback received from participants interviewed highlighted the high quality of all services and activities offered by the ITEN program and complimented the ITEN team and its consultants for their talent (technical skills of moderators and of the ITEN Team), their dedication (availability), and their attitude.

Turning to output achievement, both qualitative and quantitative data analyzed indicate that the ITEN program has performed exceptionally well and either achieved or surpassed its outcome targets as presented in sections 4.1.1 to 4.1.6.

**Table 4.1 Activity Achievements**

NO	ACTIVITY	ACHIEVED	MEANS OF VERIFICATION
<b>OUTPUT 1: MoEs have used ITEN's collaborative mechanisms to identify or implement potential solutions to a common challenge of policy or practice in STEM teacher education</b>			
<b>1.1</b>	Form Project Teams from MoEs with shared problems of policy or practice in STEM teacher education that work to develop and work toward goals and seek feedback through ITEN mechanisms	Yes	Annual Reports (2019, 2020, 2021) RPPI's (May/Nov 2019, May/Nov 2020, May/Nov 2021) ITEN Website, Master Contact List database
<b>1.2</b>	Execute three Seminars that include information-sharing and feedback among Project Teams and other MoEs that feature good practices in STEM education policy and practice	Yes	Annual Reports (2019, 2020, 2021), ITEN Website

<sup>3</sup> And considering that assessing activity achievement is outside the scope of work described in the ToRs

1.3	Organize approximately ten CXs among MoE to promote knowledge exchange and capacity building	Yes	Annual Reports (2019, 2020, 2021) RPPI's (May/Nov 2019, May/Nov 2020, May/Nov 2021) ITEN Website Project document
1.4	Support the regular scheduling of virtual communication among Ministries to facilitate the Project Teams and to feature the work of Ministries in publications	Yes	ITEN website Publication synthesizing findings of project teams

**OUTPUT 2: A community of STEM teacher leaders (ITEN Teacher Fellows) have increased their capacity for quality STEM teaching (competence and self-efficacy), particularly in physics at early childhood (ages 3-6) and secondary (ages 15-18) levels, with special attention to the inclusion of women and girls in STEM**

2.1	Build cohort of 30 STEM Teacher Fellows nominated by their MoEs	Partially	RPPI Nov 2021
2.2	Provide a 2-year experience of online and face-to-face professional development in STEM that takes into consideration issues surrounding equitable participation of girls and women in STEM	Yes	RPPI Nov 2021
2.3	Support community-based leadership activities of Teacher Fellows	Yes	2021 Annual Report RPPI Nov 2021

**OUTPUT 3: MoEs have increased their provision of quality STEM professional development to teachers**

3.1	Host events that feature the work of MoEs and that expose other Ministries to evidence-based professional development resources for STEM teachers available through ITEN	Yes	*Activity Surveys, Registration Reports *RPPI Nov 2021
3.2	Award approximately ten Seed Grants among MoEs to support the institutionalization of evidence-based professional development, including ITEN-sponsored STEM workshops and digital resources such as Virtual Communities, Teacher Resource Center	Yes	*2021 Annual Report *RPPI Nov 2021
3.3	Update the content of ITEN website and online resources in coordination with OAS Press and Communications to demonstrate coherence of purpose and a suggested professional development pathway for teachers	Yes	ITEN website

**OUTPUT 4: Project Planning, Monitoring and Evaluation**

4.1	Project Planning	Yes	PRODOC
4.2	Project Monitoring	Yes	PRODOC
4.3	Project Evaluation	Yes	Evaluation reports
4.4	Dissemination	Yes	Annual Reports (3), ITEN website Publications

### 4.1.2 Output 1

Table 4.2 Summary Indicators linked to Output 1

SUMMARY INDICATORS LINKED TO OUTPUT 1	BASELINE	TARGET	ACTUAL	ACHIEVEMENT
At least 66% of Ministries provided examples of new ideas acquired from ITEN activities.	0	66	85	Surpassed
34 Cooperation Exchange (CX) and Seed Grant (SG) portfolios published mention use of ITEN to address a shared problem of policy or practice.	0	34	43	Surpassed

**Finding 1:** Ministries of Education used ITEN’s collaborative mechanisms to identify potential solutions to a common challenge in STEM education. Ministries have also significantly increased their ability to support teachers in STEM education.

The ITEN program aimed at having at least 66% of participating Ministries report engaging in collaborative mechanisms to solve any given STM education challenge. As suggested by interviews with Ministry representatives and through document review, **this outcome has been surpassed to reach a high of 88% in November 2021.**

To understand the types of new ideas that Ministries gathered from their participation in the ITEN project and if (and how) they implemented such ideas, the ITEN team administered an annual survey (The Health of the Network Survey). The most recent survey, administered in September 2021, had an 80% response rate and reported very positive outcomes, with 94% of Ministries and teacher education institution representatives indicating that they had tested, identified, and/or implemented a new or modified policy or program. Our analysis of the documentation<sup>4</sup> indicates that such new ideas can be grouped into four broad categories:

- 1) Reinforcing an organizational culture to support teachers as they engage in STEM education, for example creating training opportunities and STEM tools for teachers, supporting teachers as they introduce the STEM approach in their curriculum.
- 2) Establishing collaborative problem-solving, amongst teachers and education managers to allow teams to think creatively.
- 3) Implementing community-building processes.
- 4) Offering support for teacher leadership.

<sup>4</sup> RPPI reporting period 5/21/2021-11/21/2021; Annex HSN November 2021.

Evidence from interviews provided further examples of new ideas and/or approaches deriving from the participation of ministries in the ITEN project. Interview data showcased how through participating in the ITEN projects Ministries learned from one another, recognized that many institutions from the region were facing similar issues and that solutions from other countries could, in many instances, be adapted to their own situation.

Data collected from interviews and document review also suggest that participating Ministries feel much better equipped to build the capacities of their cadres of teachers in STEM techniques. Through their engagement in the ITEN project, and their collaboration with other entities (other ministries, universities, NGOs, research centers), Ministries reported delivering training, offering tools (booklets, videos, etc.) creating online platforms, all with the aim of providing teachers with the necessary support to introduce STEM in the classroom, as presented in Table 4.3 below.

**Table 4.3 How ministries strengthened the capacities of teachers after engaging in ITEN**

MINISTRY AND ITS PARTNERS	CAPACITY BUILDING ACTIONS IMPLEMENTED AFTER ITEN IV
MoE <u>Nevis</u> , MoE <u>St Kitts</u> with the American Modelling Association	Further to participating in the ITEN project, the ministry taught 13 teachers the evidence-based Modeling Instruction Approach.
Ministry of Public Education ( <u>Costa Rica</u> )	The ministry created video recordings of effective practices in early childhood classroom for teachers across the country.
MoE <u>Paraguay</u> and the Secretariat of Education ( <u>Colombia</u> )	Both ministries developed Science, Technology, Reading, Engineering, Arts and Math (STREAM) development activities including an international seminar, teacher course and virtual teacher training at Coronel Oviedo Institute (Paraguay).
MoE SVG and University of Technology (Utech) of <u>Jamaica</u>	The ministry created an online STEM portal using a government platform provided by the MoE (demonstrating country buy-in).
MoE and Culture ( <u>Uruguay</u> ) Members of a Project Team from MoE ( <u>Argentina</u> ) Cruzada Patagonica Foundation ( <u>Argentina</u> ) (Autonomous University of <u>Santo Domingo</u> )	The ministry built a four-module STEAM course for 120 teachers leveraged later into a 3-day workshop for 1200 teachers.
University of the West Indies (UWI), teachers from <u>Trinidad and Tobago</u> , the <u>US</u> , <u>Jamaica</u> and UWI	Learned to streamline activities for the second year of the UWI-ITEN STREAM Virtual Community of practice.
MoE of <u>Colombia</u> and the Siemens Stiftung Foundation ( <u>Chile</u> )	The ministry developed a framework for STEAM education in early childhood education in Colombia and produced a literature review of effective practices to close the gender gap through early childhood STEAM education.
MoE of Tucuman ( <u>Argentina</u> )	Institutionalized the STEAM course developed by their Project Team (PT) into their FORMAR <sup>5</sup> program.

Sources: Interviews and RPPI documents

<sup>5</sup> The Program **Formar Igualdad** in Argentina promotes capacity building with a gender and inclusion perspective in the private sector.

**Finding 2:** In addition to ministries, other educational institutions have increased their abilities to support teachers in STEM education, creating an organizational web of support to teachers and evidence of public and private partnerships in education.

The ITEN project has targeted government agencies as a key group to strengthen, and Finding 1 confirms results achieved. In parallel, it is worth noting that other educational institutions have benefited from the ITEN and have reported significant gains in their abilities to support teachers, as illustrated in Table 4.4 where some results exemplify partnerships between the public and the private sectors.

**Table 4.4** How educational institutions (beyond ministries) strengthened the capacities of teachers after engaging in the ITEN

TEACHERS AND ORGANIZATIONS BENEFITTING FROM ITEN	TEACHER CAPACITY BUILDING ACTIONS IMPLEMENTED AFTER ITEN
Teachers from Fundación B (Colombia) Sunshine School (USA) Chiminike Children's Museum (Honduras)	Together this group developed a comprehensive matrix of STEAM socio-emotional and professional competencies for children from infancy through grade 3.
Shortwood Teachers College (Jamaica)	The College consolidated resources obtained through the ITEN for virtual STEM laboratories, organized content into a course for 130 teachers, and institutionalized a syllabus.
Florida International University	The Extreme Events Institute of Florida International University learned about Science Writing Heuristic from Iowa State University and from experiences from the Ministry of Finance of Jamaica. In turn they created a hands-on course on hurricane science for secondary educators.
Public School of Advanced Pedagogical Education of Lasalle (Peru) and Diocesan Teacher Education Institute of Capiibary (Paraguay)	Together this group developed a comprehensive matrix of STEAM socio-emotional and professional competencies for children from infancy through grade 3.

Sources: Interviews, RPPI and Project Status Reports

**Finding 3:** Cooperation Exchange (CX) and Seed Grant (SG) portfolios include ample descriptions of what was learned (technical and interpersonal skills) through the ITEN project and how such learning was used and leveraged.

The second indicator linked to Output 1 measured learning acquired through Cooperation Exchanges (CX) and through Seed Grants (SG), and **this indicator has been surpassed** (target 34; actual 43). Our review of documents, including RPPI and the different portfolios developed by CX, and SG teams confirm that CX and DG participants described in their reports the diverse ways in which they used

and disseminated what they learned from the ITEN project. Though some of this evidence is included in [Table 4.4](#) above, the evaluation team developed the following three vignettes to give life to these regional experiences of problem solving and knowledge sharing. The first vignette "Strengthening STEM Capacities among Rural Teachers via Active Learning Methods and PhET Simulations" is a multi-stakeholder initiative that expanded rural student's access to STEM education, the second vignette the "Sowing STEAM-H", aimed at limiting students' failure in technical subjects upon completion of high school studies, and the third vignette "Girls in STEM: An Inclusive Early Education" explored potential solutions to expand pre-school teachers' access to STEM education. Though we could have selected other equally compelling examples, these three vignettes offer a good spectrum of how learning was used and showcase some of the following:

- The results of CX and SG have benefitted both urban and rural areas, which is key for certain parts of the Latin America region or the Caribbean where students in rural areas have significantly less access to new methodologies.
  - CX and SG fostered regional partnerships, sometimes between public and private entities.
  - CX and SG addressed educational problems affecting girls and boys in vulnerable areas (often rural locations)
  - CX X and SG results had a wide reach, well beyond those who participated in the ITEN activity. During our interviews, respondents routinely noted that that training one person resulted in subsequently reaching 20, 50 or 100 (and more) other teacher, emphasizing the multiplier effect of the project.
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## Vignette 1 Strengthening STEM Capacities among Rural Teachers

### STRENGTHENING STEM CAPACITIES AMONG RURAL TEACHERS VIA ACTIVE LEARNING METHODS AND PHET SIMULATIONS

The Digital University Institution of Antioquia (IU Digital, Colombia) and PhET Interactive Simulations<sup>6</sup> of the University of Colorado at Boulder (USA) partnered to promote different initiatives as awardees of ITEN seed grants, from 2019 to 2021.

#### Project implementation and results

- MOOC “Interact, Discover and Learn Sciences with PhET Virtual Laboratories” (6,000 participants).
- Open-access learning platform, including 20 interactive guides on how to carry out virtual and in- person lessons, aligned to the Colombian school curriculum.
- PhET Science virtual workshop for the Caribbean (540 participants), including interactive guides, which were translated and modified for English- speaking Caribbean teachers.
- Online course “Active Methods in STEM” (3,000 teachers enrolled), launched by IU Digital.
- 16 virtual and in-person workshops targeted at rural teachers and students of secondary level in Antioquia (Colombia), focused on the use of experiments and simulations.

#### Problems addressed

Rural school students have limited access to scientific, technological and mathematics training, which is promoted with these initiatives through PhET simulations and experiments.

#### Challenges faced

- PhET focuses on the development of virtual tools, but facilitations skills were required and provided (as a new function in PhET), through pedagogical accompaniment aimed at rural teachers.
- Ownership of PhET tools from teachers and replication, which require continuous training and the analysis of rural context at classrooms to establish bilateral connections with teachers, avoiding imposing resources from outside.
- Approaching to MoE has been promoting so the tools developed are included in the school curriculum, as well as the implementation of a trainer of trainers program.
- Management skills are required for the adoption and replication of these initiatives by teachers.
- Hopelessness was perceived among teachers to promote changes, due to limitations they encounter (lack of equipment, connectivity), or little identification of allies.

#### Benefits and sustainability

- Opportunity for testing and adopting innovative approaches and tools in STEM, with an inclusiveness focus (rural settings) and the potential to transform similar contexts abroad.
- Installed capacity in project management, as well as allies identified, and tools developed.
- Identification of leader teachers for replication of the tools developed, as well as potential access to funds in USA.
- Personal and professional development; e.g., PhET representative has been allocated to Africa to develop similar project.

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<sup>6</sup> PhET Interactive Simulations, a project at the University of Colorado Boulder, is a non-profit open educational resource project that creates and hosts explorable explanations. It was founded in 2002 by Nobel Laureate Carl Wieman. PhET began with Wieman's vision to improve the way science is taught and learned.



## Vignette 2 Girls in STEM: An Inclusive Early Education

### GIRLS IN STEM: AN INCLUSIVE EARLY EDUCATION

The Colombian Academy of Exact, Physical, and Natural Sciences received an ITEN Seed Grant to support early childhood teachers, through its outreach and education branch program, STEM Academia.

#### Project implementation and results

The MOOC “Girls in STEM: An Inclusive Early Education”, was developed by STEM Academia with the support of ITEN Teacher Fellows from Chile, Costa Rica and Dominican Republic. The MOOC was piloted before becoming available to teachers across the region. 75 teachers enrolled in the pilot phase and 400 people registered in the MOOC. The project received support from Siemens Stiftung Foundation Network STEM LATAM, to disseminate project’s activities among its networks in Latin America.

#### Problems addressed

Limited professional training on STEM in early childhood and with gender approach; also, limited identification of allies to work collaboratively, in order to scale up the impact of these initiatives to a higher level, such as national and regional.

#### Challenges faced

- Limited digital literacy, since before the pandemic most training offers were in- person.
- Managing mixed modalities, with the gradual return to in- person teaching modality.
- Some logistical problems arose due to the delay in certain payments by the OAS.

#### Benefits and sustainability

- Regional vision of gaps in STEM approach has been provided through the MOOC.
- Diverse tools were available to teachers, so they can apply them in the classroom. It should be noted that these resources are not available in the region, much less oriented to early childhood, in a virtual, free and self-paced way.
- Students benefit as teachers are being trained.
- Positive feedback from teachers, evidenced during interactive activities, such as forums.
- Installed capacity (administrative support) for replication, as there is still a vast target public to reach.

### Vignette 3 Sowing STEAM-HM

#### SOWING STEAM-H

Cruzada Patagonica Foundation (Argentina) used an ITEN Seed Grant to host a National Virtual Seminar, "Sowing STEAM-H", along with their collaborators from the Foundation for Education and Development for Rural Areas and its People (FEDIAP).

#### Project implementation and results

The seminar allowed the exposition of STEM projects (with a focus on humanities) developed by students and teachers, to promote the exchange of experiences between rural schools. After the event, a digital platform was launched, including 5 micro-lessons to delve into the topics addressed in the seminar; certificates were awarded after completion of micro-lessons.

#### Problems addressed

Generally, students finishing high school fail subjects on mathematics and sciences. Therefore, the project sought to bring a solution to the problem of desertion among students.

Also, rural schools are very distant, so reaching teachers is challenging; with the project, online training to teachers was provided.

#### Challenges faced

Initially, 270 people registered in the seminar; however, only the half attended. Although this situation is inherent in virtual events.

#### Benefits and sustainability

- The project allowed organizing methodologies that have been implemented so far (project-based learning, learning by doing, "flipped" lessons), making them available to teachers.
- Changes in school curriculum was made in one of the Foundation's schools, based on learning areas (not by subjects), seeking alignment with the STEM methodology, which has a holistic approach. Unfortunately, the traditional curriculum does not follow this pattern, which is still maintained in the Foundation only to comply with the formality, in parallel to the holistic approach mentioned above.
- An online platform including the micro-lessons was expanded to 1,000 users, thanks to ITEN financing. The Foundation has developed a couple of project proposals to apply for funds for platform's maintenance. Funds have been secured for the current year, and the Foundation will follow the same route to obtain funds in the following years.

### 4.1.3 Output 2

Table 4.5 Summary Indicators linked to Output 2

DEGREE OF ACHIEVEMENT OF OUTPUT 2	BASELINE	TARGET	ACTUAL	ACHIEVEMENT
All Seminar workshop attending Teacher Fellows increase their content understanding of STEM topic by 20% following a face-to-face workshop held in July 2019	0	20	22	Surpassed
Teacher Fellows increase their self-efficacy as STEM teachers and STEM instruction leaders by an average of 0.5 on a 5-point Likert scale	0	0.5	0.13	Partially achieved <sup>7</sup>
80% of Teacher Fellows state that they have increased their use of evidence-based actions that include girls in STEM education	0	80	62	Partly achieved

The ITEN project selected 36 individuals to participate in ITEN Teacher Fellowships that included 20 hours of online professional development in active learning and professionalism; a 40-hour workshop and leadership training as part of the ITEN Teacher Workshop and Seminar; and 30 hours of online professional development through ITEN's Pedagogical Practices for Teaching Critical Thinking Skills. As part of the Fellowship activities, teachers were invited to attend a discipline-specific ITEN Teachers Workshop provided by UNESCO/International Center for Theoretical Physics (Active Learning in Optics and Photonics).<sup>8</sup> The expectation was that 20 of the participants would confirm an increase in the workshop topic by 20%. **This target has been surpassed**, as evidenced by the pre- and postscore test results administered at the workshop,<sup>9</sup> reported in the RPPI and validated by the Project Status Report.

To complement the achievement of this specific indicator, the evaluation has found further evidence of knowledge acquisition. Teacher Fellows interviewed unanimously reported that they had increased their skills and knowledge in STEM approaches, principles and philosophy as a result of their engagement with ITEN. These capacity gains can be categorized as follows:

- **Acquiring a deeper understanding of how STEM** approaches foster a positive culture that allows students to problem-solve, collaborate, create, test ideas, and build with their hands. This, as some respondents noted, in a cultural context where education is heavily teacher-centered and where students' innovation and creativity is not often rewarded.

<sup>7</sup> Despite the variance between target and results achieved, based on interview data and on literature review on self-efficacy, the evaluation team confirms that this objective has been partially achieved (rather than not achieved).

<sup>8</sup> The workshop was held in Lima from 18 -21 August

<sup>9</sup> Reference: RPPI reporting period 05/21/2019-11/20/2019, pp 9 and 10; Project Status report

- **Better understanding of how to create a safe learning environment** that allows students to fall and try again, embrace mistakes as part of the learning process. Again, as noted by several respondents, this is benefitting a region where innovation in school is limited by the fear of failing.<sup>10</sup>
- **Gaining insights on how to encourage teamwork** and knowledge application and learning how to share insights amongst students, rely on one another to find optimal solutions and be more accepting of diverse points of views.
- **Helping students (as early as in pre-school) acquire stronger foundations in math** and science and fostering scientific literacy, all of which is crucial for success in school, university and in the workplace.

Teacher Fellows also reported acquiring a wide range of interpersonal and leadership skills, including a higher degree of self-esteem, improved leadership abilities, increased confidence in advocacy. Such gains impacted positively their personal and professional lives. The gain in self-esteem amongst teachers is of significant importance considering that it impacts students in the classroom. Studies<sup>11</sup> have demonstrated that self-esteem is an integral part of the growth of both teachers and students who interact in varied capacities daily. Teachers' self-esteem is also linked to self-efficacy (how we think and how we evaluate ourselves) because, unfortunately, if teachers have a distorted self-image, it is possible that they become incapacitated in their teaching career.<sup>12</sup> Vignettes 4, 5 and 6 illustrate how participating in the ITEN project has empowered teachers with both personal and technical skills.

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<sup>10</sup> Failing to learn: The impact of failures during activities,  
<https://www.sciencedirect.com/science/article/pii/S187118711730175X>

<sup>11</sup> Ingibjörg Frímannsdóttir - [University of Iceland](#) September 2014 [Scandinavian Journal of Educational Research](#) 58(5) DOI:[10.1080/00313831.2013.773559](https://doi.org/10.1080/00313831.2013.773559);

<sup>12</sup> Exploring Teachers' Self-Esteem and Its Effects on Teaching, Students' Learning and Self-Esteem James Mbuva National University. *Journal of Higher Education Theory and Practice* Vol. 16(5) 2016 59

## Vignette 4 Mentoring Program on STREAM

### MENTORING PROGRAM ON STREAM

A mentoring program to help primary school teachers integrate STREAM into their teaching and become leaders themselves was developed by a ITEN Teacher Fellow from Jamaica, with the support of a Teacher Leadership Fund.

#### Project implementation and results

The project included multiple sessions about STREAM targeted at teachers, who then built their own STREAM lesson plan by using a template. Then, participating teachers led a showcase of the lessons they developed and implemented, including resulting student work. 7 teachers participated in the mentoring program, and 200 teachers participated in the follow-up share-out by the 7 mentored teachers.

#### Problems addressed

Knowledge gap on STEM in primary school students, that difficult them to transit into secondary level.

#### Benefits and sustainability

- Change of perspective in teaching methods, from a teacher-centered to a student-centered approach, and from a student- consumer of knowledge to a student- producer of knowledge approach; also, critical thinking approach was employed.
- Personal and professional growth, as well as great benefits both for teachers and students.
- Network expanded, as well as recognition obtained; e.g., invitations as speaker in events organized by other countries. Also, she had the opportunity to author articles in publications.

## Vignette 5 Laboratory Practice Workshops in Chemistry and Physics

### LABORATORY PRACTICE WORKSHOPS IN CHEMISTRY AND PHYSICS

An ITEN Teacher Fellow from Dominican Republic applied twice to the Teacher Leadership Fund, obtaining both funding for 2020 and 2021, to carry out workshops in different districts in her country.

#### Project implementation and results

During 2020, the Teacher Fellow trained 350 chemistry teachers of secondary level in STEM approach, in coordination with the regional directorate of education. During 2021, the Teacher Fellow did the same activities, but targeted at 500 physics teachers.

#### Problems addressed

- Limited teacher training in STEM subjects. STEM methodology is little known in the country.
- Girls are normally excluded in STEM training, so inclusion mechanisms were sought to give them opportunities.
- Traditional teaching methodology in STEM is based on theoretical content, with little practical approach. Therefore, during the workshops, practical approaches were promoted, which were well received by students and teachers, who were overly excited and eager to innovate and replicate what they had learned.

#### Challenges faced

- Reaching out decision makers at the central level (Ministry of Education) has not been easy. However, it was possible to reach out at the level of regional directorate of education. Therefore, it is expected that the regional agencies can be the spokespersons for the initiatives undertaken. It is worth mentioning that MoE does not currently have a STEM policy.

- Change of authorities as a result of the elections has made everything slower. In addition, there is the mentality of not giving continuity to processes started in the previous administration; this is reflected in the lack of interest of MoE to support the project.

#### **Benefits and sustainability**

- Increase in self-esteem amongst those who participated
- It has been planned to create a group of trained teachers, to follow up and support them in whatever they need.
- Approaching teachers' association, to facilitate access to decision makers in the future.
- Network expanded, as well as recognition obtained; e.g., invitations as speaker in webinars were received. Also, she had the opportunity to author articles in publications.

## **Vignette 6 Promoting STEM in Early Childhood Teachers**

### **PROMOTING STEM IN EARLY CHILDHOOD TEACHERS**

The online course “Promoting STEM in Early Childhood Teachers” was developed by *Equipo Fuerza*, a group of ITEN Teacher Fellows from Colombia, Costa Rica, Peru, and the Dominican Republic. The project was supported by Teacher Leadership Funds.

#### **Project implementation and results**

Course sessions topics focused on teacher leadership, STEM and gender equity, projects in STEM, early childhood inquiry, etc. The training took place across 30 hours (15 synchronous and 15 asynchronous), and successful participants received a co-certificate from ITEN-OAS. 90 teachers enrolled the course.

#### **Problems addressed**

- STEM approach is a relatively new topic, so a need was identified there. There was no clarity about the STEM concept, so Teacher Fellows carried out a biographical review on the subject to transmit it to teachers.
- Paradigms that only men are involved in STEM; the project addressed topics to break up such paradigms.

#### **Challenges faced**

- Application of creativity to reach out teachers, through the planning of activities that are user- friendly, avoiding them feeling pressured. Teacher Fellows constantly reflected on how to improve their lessons, and also motivated teachers to make posters showcasing concrete results.
- Taking theoretical lessons into practice. Pandemic helped in some way, as it forced Teacher Fellows to apply certain virtual tools, which then were exchanged with other countries. It was also a challenge to migrate such tools to in-person modality.

#### **Benefits and sustainability**

- Empowerment and leadership skills were promoted in Teacher Fellows, so they could inspire other teachers.
- Opportunity for experimentation and piloting innovative ideas, allowing Teacher Fellows to gain greater self-confidence and self-esteem, as they lost the fear of making mistakes.
- Personal and professional development. Teacher Fellows had opportunities to transmit what they learned to their own educational institutions; e.g., one of the Teacher Fellows was asked by her director to develop an institutional educational project in STEM, for which she considers that her institution also benefits from the knowledge acquired.
- Network expanded to create a learning community, as well as recognition obtained. E.g., invitations as speakers in events organized by other countries; opportunities to author articles in publications; invitations from TV programs to promote STEM approach.

**Finding 4:** The ITEN project is showing partial achievement on two of its output indicators (increase in self efficacy and increase in use of STEM approaches). Both results must be contextualized, considering COVID and considering that they are self-reported and actual achievement is likely higher than reported.

Achievement of Output 2 was to be measured by two indicators that have only partially been achieved; namely, the extent to which Teacher Fellows increased their self-efficacy as STEM teachers and STEM instruction leaders by an average of 0.5 on a 5-point Likert scale and the expectation that 80% of Teacher Fellows would state that they have increased their use of evidence-based actions that include girls in STEM education. On both fronts, the ITEN team (through RPPI data as of November 2021) signals only partial achievement.

With respect to the increase in self-efficacy, one explanation offered by the ITEN team is that this target may have been overestimated considering the challenging context imposed by the pandemic. An alternate explanation (corroborated by studies)<sup>13</sup> is that teachers self-reporting data in their efficacy is often underestimated. Thus, while Teacher Fellows have acquired both technical and interpersonal skills through the ITEN project (as evidenced by interviews), they may have shied away from reporting significant gains considering that STEM is still relatively new in the region.

Finally, evaluation confirms that fewer Teacher Fellows than projected were able to make use of evidence-based actions that include girls in STEM education. Though disappointing, this can be explained by several reasons reported during interviews: first, the COVID-19 pandemic resulted in a significant amount of teacher time spent adapting to online delivery of their regular program. Thus, introducing STEM into their classroom activities would have been an extra load to their already very stretched schedule. Second, many Teacher Fellows encountered difficulties in making modifications in existing curricula.

Overall, considering Output 2 and despite some shortcomings, the evaluation found ample evidence of skills acquisition (both technical and interpersonal), skills use, and skills transfers resulting from the ITEN project, for example job promotion to be able to oversee a program or an initiative containing STEM activities (3)<sup>14</sup>; learning how to bridge gender disparities in sciences (7); acquiring mentoring skills to coach other teachers STEM techniques ( 14); computer skills (16); public speaking skills (8); self-confidence (15); curriculum design (18).

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<sup>13</sup> Teachers' Accuracy in Self-Reporting about Instructional Practices Using a Focused Self-Report Inventory January 2015 [The Journal of Educational Research](#) 79(4): 205-209, DOI:10.1080/00220671.1986.10885678

<sup>14</sup> Refers to the number of respondents.

### 4.1.4 Output 3

**Table 4.6 Degree of Achievement of Output 3**

DEGREE OF ACHIEVEMENT OF OUTPUT 3	BASELINE	TARGET	ACTUAL	ACHIEVEMENT
At least 30 Seed Grant awardees explicitly include in their project an ITEN-promoted professional development offering or otherwise ITEN-approved evidence-based professional development offering that supports STEM teacher education.	0	30	31	Surpassed
At least 15,000 educational leaders who registered for ITEN-promoted professional development reported that they learned about the opportunities through local or national educational agencies.	0	15,000	21,850	Surpassed

**Finding 5:** All Seed Grant awardees have included in their offerings a wide range of professional development (PD) initiatives (ITEN approved), often combining them for greater effectiveness. Such a diverse menu of PD options was both refreshing and motivating.

To solidify results achieved through Seed Grants (SGs), the ITEN project expected SG awardees to include an ITEN-promoted professional development offering to support STEM teacher education. Both the document review of SG portfolios as well as the interviews confirm that this objective **has been surpassed**. The November 2021 RPPI reports that 31 SGs had made use of ITEN-approved evidence-based professional development, and this was verified through our review of SG portfolios. Globally, the 31 SGs have included ITEN-approved professional development offerings in the following forms: community of practice, mentoring, workshops, virtual communities of practice, documentation of teacher implementation and reflection, evidence-based practices in inquiry, academic research on science education, research-based simulation, intercultural exchanges, real-time visualization with scientific probe ware, personally and culturally relevant ancestral stories, hands-on kits, research-based principles for gender-equitable education, community-based professional development workshops, pedagogical facilitation practices, and effective practices in early childhood classrooms.

Some specific examples of such offerings were reported in Finding 2 earlier in the report to demonstrate how educational institutions have built teacher capacities in STEM education. Examples from other Member States, showing a diversity of ITEN-approved professional development offerings are reported in [Table 4.7](#) below.



Table 4.7 ITEN approved professional development offerings included in SG portfolios

SG BENEFICIARY	ITEN-APPROVED (IN BOLD) PROFESSIONAL DEVELOPMENT (PD) OFFERING
STEAMazing Project of Pima County, Arizona, USA <sup>15</sup>	Scaled and extended their <b>community of practice</b> across the Arizona/Mexico border
CeNaSu (Suriname)	Creation of <b>community of practice</b> and managed a <b>mentoring program</b> to support the adoption of digital tools with STEM integration across a network of schools
University of South-Florida and Sam Sharpe College (Jamaica)	Consolidated evidence-based practices in inquiry and prepared a <b>workshop</b> for pre-service teachers in both countries
Chip-Ohm (Mexico)	Consolidation and presentation in a <b>digital format of an extended module</b> on water rocketry as a method to teach lesson planning with STREAM methodologies to pre-service teachers at the Normal School for Advanced Studies in San Luis Potosí
Online Initiative (USA) Universidad del Valle de Guatemala (Guatemala) Vitruvian Consulting/Punto Crea (Guatemala)	Identify and document STEM-specific ministry aligned <b>open education resources</b> Working with community based professional development <b>workshops</b> for teachers across rural Guatemala
STEM Academia of the Colombia Academy of Natural, Exact and Physical Science (Colombia)	Created a MOOC based on <b>educational research</b> on computational thinking in early childhood education
Online Learning Initiative (USA) and the Vitruvian Consulting/Punto Crea (Guatemala), Universidad del Valle de Guatemala	Consolidated the ministry-aligned <b>open education resources</b> and <b>community-based professional development workshops</b> across rural Guatemala

To illustrate the diversity of ITEN-approved PD offerings included in Project Teams, the following three vignettes (vignettes, 7, 8 and 9) each shed light on these offerings, their results, and shortcomings. Of interest is the extent to which these Project Teams were able to foster regional cooperation.

<sup>15</sup> STEAMazing is a teacher professional development platform offering various resources on STEM (workshops, lesson plans, etc.). It is managed through the Office of the Pima Country School Superintendent, Arizona US.

## Vignette 7 Empowered Teachers: The Development of Logical Numerical and Scientific Thinking in Primary Education

### EMPOWERED TEACHERS: THE DEVELOPMENT OF LOGICAL NUMERICAL AND SCIENTIFIC THINKING IN PRIMARY EDUCATION

A ITEN project team (“Z team”), formed by representatives and teachers from the Marista University of Mexico, University of El Salvador, the Venezuelan Society of Natural Sciences, and the Federal University of the Rio Grande of the North of Brazil, developed the online course “Empowered Teachers: The Development of Logical Numerical and Scientific Thinking in Primary Education”.

#### Project implementation and results

The online course, which consisted of 20 hours of synchronous classes, was targeted at primary school teachers (50 teachers were enrolled). The course aimed at identifying how to achieve meaningful learning for primary school students in logical-mathematical thinking, science and the arts.

#### Challenges faced

- Due to the pandemic, it was necessary to reformulate the project initially designed to be implemented in-person at the classroom, to observe the application of the methodologies by teachers. To do so, a teacher who attended the online course was identified to verify if the application of the methodologies works out, and it did.
- The University of Salvador was unable to apply for a ITEN seed grant, due to bureaucratic processes within this state institution for accessing external funds. In similar cases, such processes took several months to conclude.
- Little involvement of some Ministries of Education in the project; therefore, it is necessary to promote awareness on STEM approach among MoEs, involving decision makers.
- Issues with some members of the project team, as their level of participation in the project was poor.

#### Benefits and sustainability

Although it was possible to promote learning with a STEM approach through the course, one pending aspect, which is key for the sustainability of this type of initiatives, is the follow-up of decision makers, through meetings with ministers, to implement the necessary changes in the school curriculum. Also, MoEs should be aware about the arduous work done by project teams, and the impact of their initiatives.

## Vignette 8 Getting Moengo STREAM-ing

### GETTING MOENGO STREAM-ING

CeNaSu, an entity of the Ministry of Education, Science and Culture of Suriname<sup>16</sup>, was awarded with a ITEN seed grant to design a STEM-focused teacher professional development, "Getting Moengo STREAM-ing".

#### Project implementation and results

CeNaSu worked with Ministry officials to identify the specific kinds of supports teachers needed due to the pandemic. As a consequence, a six-part training experience focused on digital competencies and STREAM was developed, targeted at a nominated group of teachers from basic and primary level, who then were expected to mentor at least three other colleagues. 36 teachers enrolled to the training program, and 108 additional teachers were mentored.

#### Problems addressed

The educational system in Suriname has many limitations; e.g., teachers have poor digital skills, and the internet is not available in some areas.

#### Challenges faced

Time zones in project teams were at times challenging, as well as some logistic issues arose, such as difficulties in accessing ITEN's funds through the bank.

#### Benefits and sustainability

- Participants gained familiarity in the STEM approach, and got international resources available thanks to the project, that could be shared with others.
- Strengthening of teachers' employability due to the training received in the project. In the long term, teachers are able to apply the skills acquired in any subject, not necessarily related to STEM.
- The project presented an opportunity to make districts in Suriname interact and learn one from each other; learning also came from different experiences in Latin American.
- Overlapping projects among project team members allowed the comparison and learning exchange.
- Regarding sustainability, sessions to follow-up and reflect on lessons learned were scheduled. Also, there is interest to get more people involved in the project with their own financing.

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<sup>16</sup> Stichting Centrum voor Nascholing in Suriname

## Vignette 9 STEM Environment: Creating Experiences in the Classroom

### STEM ENVIRONMENT: CREATING EXPERIENCES IN THE CLASSROOM

The Ministry of Public Education of Costa Rica (through the Gamez Solano Institute for Professional Development) was awarded with a ITEN seed grant to develop, in collaboration with the Technological University of Costa Rica, a virtual, hands-on STEM workshop series, targeted at early childhood teachers.

#### Project implementation and results

During each of the three-workshop series, participants are expected to bring a set of low-cost, everyday materials so that they can follow along with the presented activities. 1,368 teachers attended the first workshop, 1512 attended the second one and 1,221 attended the third workshop.

#### Problems addressed

- Gender gaps in STEM; with the project, stereotypes that women do not study STEM careers were addressed.
- Limited use of critical thinking approach in teaching method, which was promoted through the project with the design of playful and innovative tools, fostering inquiry; these tools were made available to teachers.
- Limited leadership skills in teachers, which was promoted in the project through the vindication of the teaching profession, aiming to develop in them not only hard knowledge, but also leadership skills.

#### Challenges faced

- At the beginning, it was difficult to agree among project team members, which then could be managed.
- The pandemic was a limiting factor, which influenced the pedagogical proposal of the project.
- Economic factors, due to the austerity as part of the pandemic; project team would have wanted to invest in more resources, such as brochures, and improvement of video production.

#### Benefits and sustainability

- Virtual tools remain available to be used by remote and rural areas, and mentoring can be used as a strategy to transfer knowledge.
- International scope of the initiatives, with the participation of people from other countries in the events. Positive feedback has been received from participants, due to an exchange of learning between countries has been promoted.
- Connections were established with other allies at the national and international level.
- Empowerment in teachers, as they feel valuable as promoters of STEM topics in early childhood.
- The Ministry of Education of Costa Rica holds a policy instrument (National Public Investment Plan), which includes a component in STEM. The Ministry, unlike some countries, maintained its support during the project lifetime, as it was aligned with the school curriculum in Costa Rica.
- The Ministry also published a special edition of its *Conexiones* journal, including articles written by ITEN project team members (many of them are first-time authors), as part of their personal leadership development. The articles showcase good policies, programs, and practices in STEM teacher education across the region.

The second indicator linked to Output 3 **has also been surpassed** and this is evidenced in both documents and through interviews. Based on the November 2021 RPPI,<sup>17</sup> the ITEN team has documented 21,907 responses from participants to their events confirming that they had learned about the opportunity through local or national education agencies. Our interviews with beneficiaries unanimously confirmed that information about ITEN opportunities were widely disseminated through their country's educational agencies.

#### 4.1.5 Output 4

**Table 4.8 Degree of Achievement of Output 4**

DEGREE OF ACHIEVEMENT OF OUTPUT 4	BASELINE	TARGET	ACTUAL	ACHIEVEMENT
Production of five semi-annual progress reports approved by DPMO and donors	0	5	6	Surpassed
80% of the recommendations from the external evaluation of ITEN III incorporated by the end of the project	0	80	100	Surpassed

**Finding 6:** The ITEN project has been planned, monitored, and evaluated according to plans. The OAS reports a high degree of satisfaction with the content, the timeliness and the presentation of reports produced.

As certified by the Department of Procurement Services and Management Oversight (DPMO), the ITEN team has produced all (plus one) semi-annual reports that were approved by DPMO and by donors. In this regard, Output 4 **has been surpassed**. All progress reports were submitted on time. Based on our review, the RPPI are evidenced-based, providing triangulated information on results achieved during the period under review. The structure of the reports was aligned with the chain of expected results at the level of activities, outputs, and outcomes. Interviews with DPMO and with the Finance Department of the OAS confirm that all reports were satisfactory and in compliance with OAS expectations.

#### 4.1.6 Implementation of ITEN III Evaluation Recommendations

**Finding 7:** All recommendations suggested in the evaluation of ITEN III have been incorporated into the design and execution of ITEN IV.

The evaluation of ITEN III<sup>18</sup> listed six key recommendations to inform the design of ITEN IV. Interviews with the ITEN team, supported by a review of ITEN IV project documents, RPPI and Project status report indicate that, as of September 2021, all six recommendations (100%) have been effectively

<sup>17</sup> RPPI reporting period 5/21/2021- 11/20/2021, p 18/44

<sup>18</sup> Universal Management Group – Evaluation of ITEN III

implemented, thus surpassing the proposed 80% target. Table 4.9 below provides details of all actions taken to implement the six recommendations of the ITEN III evaluation report.

**Table 4.9 Degree of Incorporation of ITEN III Evaluation into Design of ITEN IV**

ITEN III EVALUATION	ACTIONS TAKEN TO ADDRESS THE RECOMMENDATION	DEGREE OF INCORPORATION
<b>Recommendation #1:</b> ITEN Phase 4 should consider retaining only the most effective activities.	Collaboration Exchanges have been extended (i.e., to include Project Team activities, opportunities for exchanges, seed funding for implementation, as well as a long-term Teacher Fellowship)  ITEN IV invested only in the most effective digital resources (i.e., the webinar series to respond to COVID-19; investment in online virtual courses and MOOCs presented by partners to enhance the capacity of institutions to offer their own activities.	Fully incorporated
<b>Recommendation #2:</b> The OAS should partner with specialized education institutions able to offer high quality professional development opportunities	To offer discipline-specific, focused professional development to the ITEN Teacher Fellowship, ITEN partnered with: <ul style="list-style-type: none"> <li>▪ UNESCO/International Center for Theoretical Physics, Dinamica Professional Development Center in Peru</li> <li>▪ The University of Colorado-Boulder</li> </ul> MOOCs and STREAM courses have been offered through partnerships with IU Digital (Colombia), MexicoX (Mexico), University of Colorado-Boulder (USA), MoE (Uruguay), University of Santo Domingo (Dominican Republic), Fundación Cruzada Patagonica (Argentina), MoE of Tucumán (Argentina), MoE (Ecuador), MoE (Peru), and the National University of Trujillo (Peru).	Fully incorporated
<b>Recommendation #3:</b> To improve effectiveness, ITEN should offer more strategic support to MoEs interested in conducting cooperation missions.	Project Team (biweekly) and Community and Leadership (monthly) gatherings, supported by one-on-one coaching of institutions, has led to significant multilateral activity through Seed Grants and un-funded virtual exchanges.  In response to the COVID situation, ITEN re-allocated funding for travel and conferences to Seed Grants, to allow for close to US\$400,000 in Cooperation Exchanges and Seed Grants across the life of the project.	Fully incorporated
<b>Recommendation #4:</b> The Theory of Change (TOC) of ITEN 4 should be more modest in its goals.	The ITEN IV ToC and the associated Logic Model indicators have a much smaller scope, and the indicators focus on learning acquisition and exchange.	Fully incorporated

<b>Recommendation #5:</b> Include a robust monitoring, evaluating, learning (MEL) system.	Posting for the recruitment of a dedicated M&E expert was made but turned out to be unsuccessful. the unsuccessful recruitment of a dedicated M&E expert <sup>19</sup> .  However, the new ITEN IV team brings together qualitative and quantitative M&E experience <sup>20</sup> and there is a high degree of satisfaction from DPMO on the quality of M&E report submitted by the ITEN Team.	Fully implemented
<b>Recommendation #6:</b> The design of Phase IV should be accompanied by a human resource plan to ensure effective delivery of all activities.	The ITEN team successfully recruited: (1) a Coordinator, (2) a Project Teams and Collaboration Exchanges Consultant, (3) a Teacher Fellowship and Professional Development Consultant, and (4) a Marketing and Communications Consultant.  ToR were constructed for each role to find the appropriate skillset in alignment with the needs of the project.  The roles associated with the Project Teams and Collaboration Exchanges consultancy were negotiated with the donor to permit a 6-month renewable contract for on-site team members, so as to provide more security to the consultants and to the project for longer periods of time than previously allotted to consultants.	Fully implemented

Reflecting on output achievements of the ITEN program and considering the challenges of the pandemic, it is without reservation that the evaluation team concludes ITEN IV has performed remarkably well.

## 4.2 Program Design and Management

This section discusses the quality of ITEN IV's design and the management of its implementation. We explore the following themes: a) Is the design of ITEN IV coherent with the global and regional educational context and with the priorities of the OAS? b) Is ITEN IV supported by a robust theory of change (ToC)? and does the project team apply results-based management principles from inception to conclusion, including quality of ITEN's indicators to measure success?

<sup>19</sup> Posting for a dedicated Monitoring Expert was placed on the OAS website over two periods, and received 51 distinct applicants (two of which were eligible, and one of which appeared to be qualified for the position, but was not eligible).

<sup>20</sup> Four members of the ITEN team completed CITI Training for Socio-Behavioral research, including ethical research practices, and the full data collection and IRB approval was received by the University of Maryland.

### 4.2.1 Alignment of ITEN design with global, regional, and national priorities

**Finding 8:** Concerning its design, ITEN IV can be summed up as the right idea considering the complexities of our current global context, OAS priorities, and regional educational priorities

A review of the ITEN project confirms that its design is both relevant and timely, considering several of the educational challenges described in the following paragraphs and observed at the global level, particularly for girls' achievement, at the regional level and at the country level. Two of ITEN's foundational pillars—its focus on STEM and its focus on strengthening teachers and organizations—are particularly relevant for the current context.

#### **Critical thinking acquisition through STEM: a foundation for innovation and competitiveness**

At the global level, there is increasing recognition that [STEM education](#) is important for future generations *because our world depends on it*. Current environmental crises suggest that identifying solutions will require problem-solving through multiple scientific lenses and critical thinking. STEM reinforces critical thinking in the classroom, including analysis, interpretation, explanation, and self-reflection in a way that resembles real life. Through STEM education, students learn facts and a method of thinking that can be applied to solve real world problems. As an increasing number of people have recognized the significance of STEM education, they have started to look for solutions that can better bring STEM education into every classroom. STEM education creates critical thinkers, increases science literacy and enables the next generation of innovators.

In Latin America and the Caribbean, there has been an increased awareness of the benefits of STEM education. The following Vignette 10 provides some examples of countries in the LAC region that have incorporated STEM education into their national educational priorities. The importance of STEM was also echoed in interviews held with government officials interviewed during the evaluation.

#### **Vignette 10 Stem as a Priority in Education in the LAC Region**

##### **STEM AS A PRIORITY IN EDUCATION IN THE LAC REGION**

##### **Quality Teachers and STEM Education as a Priority for Mexico**

As part of the country's education reform, Mexico plans on providing all children and adolescents in the country with free, quality scholastic education. Around 20 percent of public funds find their way to the education sector. This includes building and expanding schools, top-notch teacher certification, investments in quality and inclusive lessons, and investments in modern science and technology teaching and learning methods. The reform also includes efforts to encourage girls and women to explore STEM subjects and develop these skills into future opportunities<sup>21</sup>.

<sup>21</sup> <https://www.siemens-stiftung.org/en/foundation/education/stem-education-in-mexico/>



### STEM+A as part of the educational priorities of Colombia

Educación activa y nuevos enfoques educativos para impulsar el pensamiento creativo, computacional y crítico se presentarán al país en el marco del primer Campamento Nacional de Ciencia, Tecnología e Innovación (NovaCamp) en el que participarán 400 jóvenes con sus maestros.

<https://www.mineducacion.gov.co/portal/salaprensa/Noticias/389696:Medellin-sera-la-sede-del-Primer-Campamento-Nacional-STEM+A-del-Ministerio-de-Educacion-Nacional>

### Example from Jamaica

Minister of Education, Youth and Information, the Hon. Fayval Williams, says increasing tertiary enrolment in Science, Technology, Engineering, Arts and Mathematics (STEAM) programs of study is a national imperative.

“This position recognizes the urgent need to increase the level of innovation and critical thinking required for future careers and economic advancement in Jamaica,” she said.

Quote from Minister Williams, speaking at the recent virtual National STEAM Forum, which was held in collaboration with the British Council and the National Education Trust (NET).<sup>22</sup>

## Quality teachers essential for high educational achievement as recognized by the US, LAC and the OAS

Despite recognizing the importance of STEM in the classroom, countries around the world are experiencing a significant shortage of qualified teachers and instructors capable of transferring STEM literacy into the classroom. This phenomenon is particularly prominent at the pre-K level, where a significant percentage of teachers are female<sup>24</sup>.

Yet, as research shows (See quote from Dr. Linda Darling-Hammond, summarizing her years of research) LAC countries are struggling to fulfil the demand for qualified teachers (in general) and for experienced STEM teachers. Concerned about their inability to meet the seven targets of Sustainable Development Goal (SDG) 4, Ministers of Education of the region have pledged to prioritize the teaching profession and early childhood education (ECE) (see Vignette 11 below) in the Interamerican Education Agenda.

“

*(...In the USA...) research shows that the States that have really focused on getting and keeping high-quality teachers, setting high standards for teacher education, ensuring that teachers get lots of access to professional knowledge have the highest educational achievement.*

– Linda Darling-Hammond<sup>23</sup>

”

<sup>22</sup> <https://jis.gov.jm/increasing-tertiary-steam-enrolment-a-national-priority-minister-williams/>

<sup>23</sup> Dr. Linda Darling-Hammond is the Charles E. Ducommun Professor of Education Emeritus at Stanford University where she founded the Stanford Center for Opportunity Policy in Education and served as the faculty sponsor of the Stanford Teacher Education Program, which she helped to redesign.

<sup>24</sup> The 2019 OECD *Education At a Glance* indicates that, globally, 97% of preschool teachers are women. <https://oecd-ilibrary.org>. <https://doi.org/10.1787/19991487>

In addition, it is worth noting that the Interamerican Education agenda also reinforces the need for collaboration and cooperation amongst LAC States, which are key features of the ITEN IV.

## Quality teachers a regional and national priority in Latin America and the Caribbean

### Vignette 11 ITEN Well Aligned with LAC Regional Priorities

#### ITEN IV – A PROJECT WELL ALIGNED WITH REGIONAL PRIORITIES IN EDUCATION

In order to contribute to the achievement of those seven targets in SDG 4 (education), the Interamerican Education Agenda focuses on the following three priority areas: 1) Quality, inclusive and equitable education; 2) **Strengthening of the teaching profession**; 3) **Comprehensive early childhood care**.

In accordance with the foregoing and taking into account different national realities, capacities, and levels of development, while respecting national policies and priorities, the purpose of the IEA is to strengthen **inter-American cooperation**, as well as **coordination and linkages** of efforts with other international organizations and regional and subregional entities, to ensure inclusive and equitable quality education and promote life-long learning opportunities for all.

Inter-American Council for Integral Development (CIDI), ninth inter-American meeting of Ministers of Education, 9 and 10 February 2017.

Finally, it is worth noting that the ITEN IV supports several areas of work of the Executive Secretariat for Integral Development (SEDI), notably a) Cooperation and Partnerships; b) Education; c) Labor; d) Science, Technology, and Innovation; and e) Competitiveness.

## 4.2.2 Management of ITEN Project

### Leadership

**Finding 9:** The success of ITEN IV is due in large part to the exceptional qualities of the project team. Team members demonstrated complementary skills and capacities and worked together under the leadership of a highly competent project coordinator.

The most constant and unanimous feedback received from respondents interviewed as part of the evaluation was the exceptional quality of the team in charge of managing the ITEN IV. Adjectives such as dedicated, talented, considerate, attentive, bright, excellent managers, were repeatedly used to refer to each and all members of the team and the evaluation team can only echo this feedback having engaged and exchanged with the team on technical and managerial issues during the evaluation. The success of the team relies heavily on its technical expertise as well as on its complementarity. The team included a Coordinator exceedingly competent in all technical aspects of STEM, a Project Teams, and Collaboration Exchanges Consultant; a Teacher Fellowship and

Professional Development Consultant; and a Marketing and Communications Consultant. Together, the team applied its technical, managerial and facilitation skills to implement ITEN IV with success.

I have never seen such a dedicated group of program managers. The project was managed superbly, and the team was always there to help. We never felt the donor recipient attitude that often characterizes our engagement in such projects. We were all equal, all with the same goal of educating future generations.

La experiencia con el equipo de ITEN fue increíble. Lograron a establecer una red de profesores con problemas comunes de manera muy efectiva.

Despite COVID, our interaction with the ITEN team was always superb. These ladies managed to create a safe place where we could discuss and engage in solving our common problems. Despite our cultural and linguistic differences, I always felt included, always felt that I had a go-to forum to brainstorm.

The ITEN team, every one of its members, was ALWAYS available to answer our questions, address our needs, regardless of what time it was and what day it was. They never made us feel that our questions were not relevant, or that we were disturbing them. It was a very empowering experience.



## Management by Results

**Finding 10: ITEN IV has been designed and managed by results as recommended by the ITEN III Evaluation report<sup>25</sup>**

One of the ITEN III project weaknesses was the absence of clearly articulated outcome results. This made it difficult to assess the effectiveness of the project and its impact on targeted beneficiaries. In contrast, ITEN IV incorporated a results approach throughout the project cycle, starting with the inclusion of a Monitoring and Evaluation (M&E) plan in the project proposal. Further steps were taken to support the result-orientation approach during project implementation as described below.

### *Team and tools to support M&E*

The ITEN IV includes a project team well equipped with M&E competencies. Despite the lack of a dedicated M&E specialist, the ITEN team includes individuals who all have experience in M&E as well as quantitative and qualitative research methods: four members of the ITEN team completed Collaborative Training for Socio-Behavioral research, including ethical research practices underpinned by a robust content in data collection and analysis. The project team has created a calendar of research activities to monitor and learn from the ITEN IV project. It developed all data collection instruments, starting with instruments to collect baseline data, developed a literature base for the theoretical foundation of each instrument, all in accordance with ethical practices of the US Institutional Review Board (IRB). The full research plan and all assessment documents intended for monitoring and evaluating ITEN IV were presented in the IRB Plan at the onset of the project (November 2019 RPPI).

### *Logical Framework used throughout project implementation, with robust outcome indicators*

The ITEN IV proposal included a Logical Framework (logframe) (see [Appendix VI](#)) that was used as a management tool throughout the project, as evidenced by the structure of all RPPI, and that is perfectly aligned with the logframe. Our review of all indicators used to manage the project confirms their robustness at assessing change resulting from ITEN activities.

As evidenced in [Table 4.10](#) below, all were SMART indicators (specific, measurable, achievable, relevant, time-bound). All indicators measured a change, either in behavior, in achievement, or in learning acquisition. All indicators were time bound, either at the end of a specific event (workshop held in July 2019, or at project completion); all indicators were specific in the measure of change to be observed (i.e., 66% of participants). More importantly, all RPPI reports describe means of verification that were actually utilized to verify results achieved with supporting data included in each RPPI, and with gender disaggregation.<sup>26</sup>

<sup>25</sup> Recommendation 5 of the ITEN III evaluation stipulated: *The design of Phase IV should include a robust monitoring, evaluating, learning (MEL) system.*

<sup>26</sup> The only indicator that was not disaggregated by gender was the collective indicator (result of collaborative work) of CX and SG portfolios.

Table 4.10 Assessing ITEN IV Results Indicators

INDICATORS	S	M	A	R	T	MEANS OF VERIFICATION
At the end of project 66% of participating Ministries provide examples of new ideas acquired	X	X	X	X	X	Health of the Network Survey (HNS) and portfolio <sup>27</sup>
At the end of project 8 CX and SG portfolios published mention what was learned about the investigation	X	X	X	X	X	Review of CX and SG files
At the end of project Teacher Fellows increased their self-efficacy as STEM teachers and as STEM instruction leaders by an average of 0.5 points	X	X	X	X	X	Science Teacher Leadership Survey (STLS). <sup>28</sup> Analysis of pre-post tests
At the end of project At least 80% of Teacher Fellows say they increased their use of evidence-based action	X	X	X	X	X	Science Teaching Practices Self- Assessment (STPSA) <sup>29</sup> . Analysis of pre-post tests
All Seminar workshop attending Teacher Fellows increased their content understanding of workshop-specific STEM topic by an average of 20% following a face-to-face workshop held in July 2019	X	X	X	X	X	Light and Optics Conceptual Evaluation (LOCE) <sup>30</sup>
At the end of project at least 66% of Fellows demonstrate improvement in gender-equitable instructional practices	X	X	X	X	X	Portfolio review
At least 8 Seed Grant awardees explicitly include in their executed project an ITEN-promoted professional development offering	X	X	X	X	X	Review of Seed Grant portfolio <sup>31</sup>
At least 15000 educational leaders who registered for ITEN-promoted professional development activities reported that they learned about the opportunity through local / national education agencies	X	X	X	X	X	Activity survey <sup>32</sup>
5 semi-annual progress reports to be approved by DPE and donor	X	X	X	X	X	Report review done by DPE

<sup>27</sup> HNS administered at the start of May 2020 to 115 identified project teams. Response rate 97%. All survey results presented in the RPPI Annex HNS May 2020.

<sup>28</sup> STLS administered in June 2019, August 2019, December/January 2019/2020, and March 2020. All data presented in RPPI Annex STLS, March 2020.

<sup>29</sup> STPAS administered in June 2019, August 2019, December/January 2019/2020, and March 2020. Results presented in RPPI May 2020, Annex STPSA.

<sup>30</sup> Widespread physics education research has shown that most introductory physics students have difficulty learning essential optics concepts—even in the best of traditional courses, and that a well-designed active learning approach can remedy this. The [Light and Optics Conceptual Evaluation \(LOCE\)](#) was developed to examine conceptual understanding of basic geometric and physical optics for the Active Learning in Optics and Photonics program administered by UNESCO.

<sup>31</sup> More specifically, the review of SG portfolio aimed to verify if the ITEN approved evidence-based STEN practice lesson plan template developed in coordination with the T&T Ministry of Education and Jamaica's Mico University was being used.

<sup>32</sup> Activity Surveys administered to more than 25,000 respondents through 30 webinars throughout 2020 and 2021 and results report in RPPI November 2021 Annex Webinar-Data.

## Reporting on results

Finally, our review of all RPPI confirm that the reports are structured in alignment with the logframe, and all results are fully detailed in RPPI Annexes. When appropriate, for example when results have not been achieved, mention is made of how the ITEN team will monitor the situation in the following phase. Each report includes a series of lessons learned, underpinning the learning-oriented approach used by the ITEN team to manage the project.

## 4.3 Gender Integration

**Finding 11: The ITEN IV project has successfully integrated the gender dimension in its design and implementation.**

At issue for the OAS and for the US donor is whether its investments include a gender dimension well-articulated throughout project and program activities. The evaluation team found ample evidence that the ITEN IV project effectively integrated gender in its intent, design and implementation, as described in this section.

### **First, the ITEN project addresses a systemic issue affecting girl's education and girl's future economic achievement**

Research<sup>33</sup> indicates that girls are particularly under-represented in science, technology, engineering, and mathematics (STEM) education, and consequently in STEM careers. According to the UNESCO ground-breaking report *Cracking the code: Girls' and women's education in STEM*,<sup>34</sup> only 35% of STEM students in higher education globally are women, and differences are observed within STEM disciplines. For example, only 3% of female students in higher education choose information and communication technologies (ICT) studies. This gender disparity is alarming, especially as STEM careers are often referred to as the jobs of the future, driving innovation, social wellbeing, inclusive growth, and sustainable development. Thus, STEM Education (the focus of ITEN IV) is of critical importance to girls in Latin America and the Caribbean as a means to better academic performance leading to more economically viable job orientation.

### **Second, as stated earlier in the report, ITEN IV focuses on teachers, a predominantly female profession in Latin America and the Caribbean**

With a focus of the strengthening teachers' capacity, ITEN IV has embraced priority II of the Interamerican education agenda. Of interest is the most recent data<sup>35</sup> from the UNESCO Institute of Statistics indicating that 57% of teachers in Latin America and the Caribbean (combined) are female<sup>36</sup> (with percentages as high as 73% in Antigua and Barbuda (2019); 74% in The Bahamas (2018); 62% in Brazil (2019); 60% in Chile (2019); 58% in Costa Rica (2019); 63% in Dominican Republic (2017); 60%

<sup>33</sup> <https://en.unesco.org/stemed>

<sup>34</sup> UNESCO [62802], UNESCO. Director-General, 2009-2017 (Bokova, I.G.). *writer of foreword* [5530]. ISBN: 978-92-3-100233-5 (print/pdf)

<sup>35</sup> [uis.unesco.org](https://uis.unesco.org) cited in <https://data.worldbank.org/indicator/SE.SEC.TCHR.FE.ZS>

<sup>36</sup> <https://gem-report-2020.unesco.org/latin-america-and-the-caribbean/>

in Honduras (2019); and 51% in Mexico (2018). As will be discussed in the cost-benefit section (see section 4.6), the ITEN project has reached close to 237,000 teachers. This number is high, considering the amount of investment (financial and other) made through ITEN IV.

### **Third, part of the ITEN IV instructional content focused on gender-equitable instructional practices and leadership**

All teachers want their students to succeed, but unconscious biases can cause them to favor boys or fail to give girls the support they need. Teachers can avoid such biases by examining the systems that influence their behavior in the classroom. The ITEN IV offering included a module focused on gender-equitable institutional practices and leadership, aimed at raising the awareness of teachers on inclusive educational approaches to avoid penalizing girls in the classroom. The content of the module included inclusive pedagogies, use of collaborative learning, student discussion, and development of predictive hypothesis, thus encompassing a good range of methodologies aimed at bridging the educational gaps between boys and girls.

Thirty-six (36) individuals participated in the ITEN Teacher Fellowship program, a 2-year fellowship that included 20 hours of online professional development in active learning and professionalism, 40-hour workshop and leadership training; 30-hour online professional development on pedagogical practices for teaching critical thinking. All the content offered included a focus on gender-equitable instructional practices though planning of lessons.

All Teachers Fellows interviewed expressed a high degree of satisfaction for the gender-equitable instructional practices. A few admitted having marginalized girls involuntarily in the classroom and welcomed tips and suggestions to address their bias.

### **Gender disaggregated data**

Finally, a review of all documents submitted by ITEN to DPE confirms that all results are systematically disaggregated by gender.

“  
*I have always prided myself to be a feminist. So I was very surprised to realize that I was sometimes having a more lenient attitude towards my female students when it came to understanding math. I now see how that attitude is not helpful for their future and the gender-equitable instructional practices have opened my eyes.*  
 – Teacher Fellow

### 4.3.2 ITEN Efficiency

**Finding 12:** Considering the turbulent context within which ITEN IV was implemented, it is fair to say the project was efficient, mostly affected by the effects of COVID on team and beneficiaries, as well as by administrative delays within the internal systems of the OAS.

The ITEN project was implemented during a particularly chaotic context, as COVID hit the world when ITEN IV was 15 months into its implementation. The effects of COVID have been substantial: at a personal level, several Teacher Fellows as well as ITEN members were affected by the pandemic or faced the family burden of having to take care of family members or supervising family members schooled from home - such responsibilities traditionally have been assumed by women in many LAC countries-. At a technical level, teachers had to rapidly learn how to teach virtually, and this additional challenge limited the amount of time they could allocate to STEM sessions and workshops. Yet, motivation was strong and despite a difficult context, program participants stuck to their tasks, their roles and engaged in collaborative sessions as close to schedule as they could.

The project had difficulties recruiting some of its team members and this led to a slower than anticipated start-up after which the project became quite efficient in its implementation, in managing disbursements, and in producing its reports on time. Though RPPI raised some observations concerning internal delays in approval of procurement/ approval of expenses (that were affecting the efficiency of the program),<sup>37</sup> the evaluation team found no evidence that approval times for any request made by the ITEN team were outside the norms and regulations of the OAS.

Interviews with the Department of Financial Services (DFS) report no irregularities in the use of resources by the ITEN project and confirm that financial information provided through all RPPI was satisfactory. Similarly, all respondents interviews were satisfied with the speed and timeliness of services offered by the ITEN team and SG recipient raised no issue about disbursements.

At the end of the project date, 28 February 2022, ITEN had a remainder of US\$120,000<sup>38</sup> in its bank account and was granted a US\$300,000 infusion from the US to support activities to be conducted during the bridge gap, from 1 March 2022 to 31 December 2022.

<sup>37</sup>The RPPI cites at least to instances occasions where approval delays were long (though no longer than OAS norms).

<sup>38</sup> For two reasons: 1) The ITEN project was not able to spend all the money because the pandemic disrupted many of the activities which required travel (thus, travel expenses). The project reallocated those funds towards Seed Grants and Teacher Leadership Fund awards but couldn't grant more awards due to the lengthy process they require, which would have made it impossible to execute the projects before Phase IV was over. 2) The US Mission's contribution to ITEN accrued interest while in the holding account along with contributions to other SEDI projects.



## 4.4 Results Sustainability

**Finding 13:** The sustainability of results achieved by ITEN IV greatly varies. Several areas of results will be self-sustained in countries through teachers' networks. At issue is whether the ITEN project will be sustained once funding ends.

Of interest to Member States, to the OAS and to the US mission is the extent to which results achieved by the project are sustainable beyond project funding. Evidence gathered through interviews and documents suggest that the sustainability of results is quite varied.

There is a strong likelihood that personal changes reported by participants will be sustained. Unanimously, Teacher Fellows, in particular, noted that the self-esteem acquired through their experience with ITEN is embedded in their soul (quote) and will help them address other challenges in their professional life.

The sustainability of technical skills and technical knowledge deriving from exposure to ITEN activities is fairly strong. Based on the National Training Laboratory (NTL) Institute of Applied Behavioral Science's Learning Pyramid developed by Edgar Dale <sup>39</sup>, it is fair to say that the ITEN's training methodologies were varied (auditory methods such as lectures; visual methods, such as reading, audio-visual, demonstrations, and kinesthetic methods, such as ongoing group discussions and teaching others through Training of Trainers). This multiplicity of approaches maximizes the potential for learning retention and the more participant are exposed to training others and/or making use of new learning in the classroom, the higher their retention of new learning will be.

This is coherent with what participants shared with the evaluation team, namely that the more engaged in sharing knowledge with others, the more they solidified (and retained) what they had learned through ITEN. Those who had had limited opportunities to apply their knowledge in the classroom (most often because STEM was not part of the country's priorities)<sup>40</sup> were concerned about gradually forgetting what they had learned.

### CONE OF LEARNING

According to the Learning Pyramid (or Cone of Learning) developed by Edgar Dale, people remember:

- 10% of what they read
- 20% of what they hear
- 50% of what they see and hear
- 70% of what they say and write
- 90% of what they do

<sup>39</sup> Dale, Edgar. Audiovisual Methods of Learning, The Dryden Press, Pennsylvania. 1946.

<sup>40</sup> An issue to consider is whether investing in countries where STEM is not a priority is opportune. On the one hand, restricting investments to countries where STEM is a priority could yield greater sustainability of results, with results defined as application of STEM in the classroom. However, doing so would affect achieving other results, including individual development (self-efficacy), an enlarged regional cooperation, and the likelihood that those teachers in countries where STEM is not (yet) a priority could become advocates for introducing STEM in their country's future plans.

The same can be said for capacities acquired by Ministries of Education. While all expressed a high degree of satisfaction with the amount and the quality of STEM resources acquired through the ITEN project, those Ministries in countries where STEM is a national educational priority confirmed that they would use these resources (some even further investing in developing material) to support teachers. The representative from a Ministry of Education in the Caribbean went even further and said that the Ministries in the ITEN project had created a momentum leading to serious revisions in the current school curriculum to introduce STEM as a priority. As for the bonds established amongst teachers in the region their sustainability relies on goodwill and on individual champions.

As will be discussed in section 5, the sustainability of the ITEN project beyond current funding remains problematic as no new funder has manifested an interest in supporting the program.

## 4.5 Cost-Benefit Analysis

Conducting a rigorous cost-benefit analysis is beyond the scope of this mandate. Nevertheless, evidence from highly economically competitive countries in the world suggest a correlation between their investment in STEM education and their ability to foster a workforce capable of tackling current and future technological problems arising. In that regard, LAC building the capacities of LAC countries in STEM education should contribute to their economic competitiveness.

**Finding 14: There is an increasing body of research supporting the importance of STEM education for economic return and job opportunities. Countries around the globe have introduced STEM education to increase the innovativeness and of future generations.**

The last decade has seen considerable concern regarding a shortage of science, technology, engineering, and mathematics (STEM) workers to meet the demands of the labor market<sup>41</sup>. In the USA, for example, economic projections point to a need for approximately 1 million more STEM professionals than the U.S. will produce at the current rate over the next decade if the country is to retain its historical pre-eminence in science and technology<sup>42</sup>. According to the STEM Education Coalition<sup>43</sup>, STEM jobs comprise 20% of all U.S. jobs, and job openings in STEM occupations outnumber unemployed persons 1.9 to one. STEM industries are under-staffed, yet they represent a significant economic opportunity<sup>44</sup>. Recognizing the importance of STEM education for economic

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<sup>41</sup> President's Council of Advisors on Science and Technology, *Engage to excel: producing one million additional college graduates with degrees in science, technology, engineering, and mathematics* (Executive Office of the President of the United States, 2012).

<sup>42</sup> <https://www.bls.gov/opub/mlr/2015/article/stem-crisis-or-stem-surplus-yes-and-yes.htm>

<sup>43</sup> <http://www.stemedcoalition.org/>

<sup>44</sup> According to the U.S. Bureau of Labor Statistics (BLS) engineers have a median annual wage of \$100,640 and the engineering field projects to have employment growth of 6 percent from 2020 to 2030—nearly 146,000 new jobs over the next decade. The mean wage for engineers exceeds the all-occupations mean wage by \$33,210 and have they higher job security at 3.8% unemployment. <https://www.mtu.edu/engineering/outreach/welcome/salary>

returns, the **United States** have developed the *USA STEM Education Strategic Plan, Charting a Course for Success: America's Strategy for STEM Education*<sup>45</sup>, published in December 2018. It sets out a federal strategy for the next five years based on a vision for a future where all Americans will have lifelong access to high-quality STEM education and the United States will be the global leader in STEM literacy, innovation, and employment. Similarly, many other countries have developed STEM education strategies, to support their economic competitiveness. Since 2015, **New Zealand**, as part of its national strategic plan has engaged in an initiative, *A Nation of Curious Minds*<sup>46</sup>, with a ten-year goal to promote the importance of science and technology in New Zealand. In 2017, the **Scottish Government** published the *STEM Education and Training Strategy for Scotland*<sup>47</sup>. This set out a vision of Scotland as a STEM nation: with a highly educated and skilled population equipped with the STEM skills, knowledge and capability required to adapt and thrive in the fast-paced, changing world and economy around us.

Similarly, in 2015, India launched the *Skill India campaign*, aimed at training over 400 million young people in STEM skills by 2022. Also in 2015, **Australia** endorsed a National STEM School Education Strategy (2016-2026)<sup>48</sup> that focuses on developing mathematical, scientific, and digital literacy, while promoting problem-solving critical analysis and creative thinking skills.

Thus, introducing STEM in the classrooms of Latin American and Caribbean countries contributes to bringing their student cohort at par with more economically advanced countries. This is a significant benefit, to which the ITEN project has contributed.

**Finding 15: Benefits deriving from the ITEN IV investment of less than US \$3 million include are remarkably high.**

In **Figure 1** the evaluation team has attempted to capture the types of benefits derived from the ITEN project, as expressed through interviews and as gathered from documents.

This analysis suggests that the benefits deriving from the ITEN IV investment of less than US \$3 million are exceedingly high. There were benefits for all categories of stakeholders affected by the program, most importantly, for governments whose capacities to support STEM teachers was enhanced, for teachers who acquired technical and interpersonal skills as well as opportunities for career enhancement, and, most importantly for children who, through their exposure to STEM education, will acquire a solid foundation to tackle complex issues.

Although it can prove difficult to put a dollar value to some of the benefits observed, including benefits for the OAS (increased credibility and visibility in the region), or for the US government

<sup>45</sup> <https://www.energy.gov/sites/default/files/2019/05/f62/STEM-Education-Strategic-Plan-2018.pdf>

<sup>46</sup> <https://www.mbie.govt.nz/science-and-technology/science-and-innovation/funding-information-and-opportunities/investment-funds/curious-minds/>

<sup>47</sup> <https://www.gov.scot/publications/stem-strategy-education-training-scotland-third-annual-report/>

<sup>48</sup> <https://www.dese.gov.au/education-ministers-meeting/resources/national-stem-school-education-strategy>

(visibility in the region, etc.) such benefits are nevertheless important to capture as part of building a business case for investing in an initiative such as the ITEN IV project.

Much more powerful evidence of benefits arising from ITEN IV is the number of teachers who have benefitted from some form of exposure to the STEM approach (and, in turn, may have introduced STEM pedagogical features in their classrooms<sup>49</sup>). That number, according to ITEN data and verified through estimates provided by respondents comes up to 237,000 teachers. Considering that the overall ITEN budget was US\$2,774,893.50, this amounts to a cost per unit (teacher professional development) of US\$11.00 (excluding costs associated with potential teacher replacement, if Teacher Fellows conducted their training during school hours), mostly female teachers.

Furthermore, considering that in Latin America and the Caribbean the average class size is 33 students<sup>50</sup>, the ITEN IV has had the potential of affecting 7,821,000 children (representing a unit cost of US\$0.35 per child)<sup>51</sup>. Though this data remains speculative and highly dependent on whether teachers or governments took upon themselves to disseminate training results, it is nonetheless impressive and would build a strong case for further investment in similar educational projects. As we add all the less easily quantifiable benefits from the project, the overall conclusion is that ITEN IV led to a wide range of benefits considering its costs and has the possibility of generating exponential results.

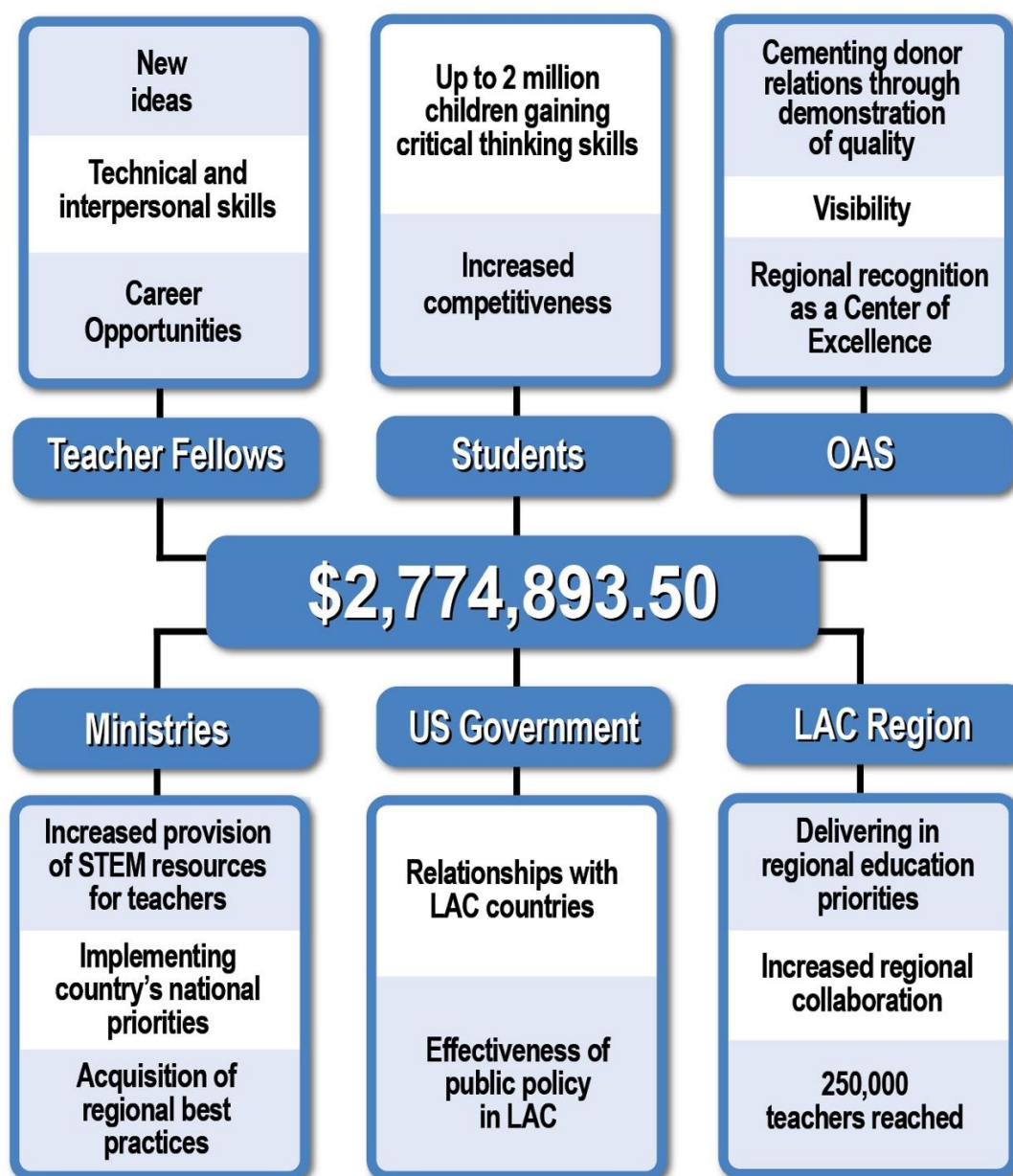
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<sup>49</sup> Evidence from interviews with government representatives from 6 countries benefiting from ITEN IV (Colombia, Mexico, Grenada, Jamaica, Argentina, Costa Rica) confirms in-kind investments by the government to support the dissemination of STEM results achieved through the project. This included for example: paid time for teachers to conduct train the trainer activities (Grenada, Argentina); infrastructure for training of trainer activities (Jamaica, Grenada, Colombia); material (all countries); publicity costs (Jamaica)

<sup>50</sup> Uruguay has the smallest average class size in the region, with 27 students per class, while Mexico has the largest, with 39 students per class. <https://publications.iadb.org/publications/english/document/Latin-America-and-the-Caribbean-in-PISA-2015-What-is-the-Relationship-Between-Student-Performance-and-Teaching-Resources.pdf>

<sup>51</sup> This potential will only be achieved if teachers and governments decide to engage in follow-up activities.

Figure 1 ITEN IV Benefits



## 5. Conclusions and Observations

### 5.1 A comprehensive and successful program with an uncertain future

The overall conclusions of the evaluation of ITEN IV are very positive. ITEN IV has had remarkable success despite the COVID context and has been implemented both effectively and efficiently. It was the right program for the right educational challenges. Over the years, the project reached close to a quarter of a million people and has led to results that have a reasonable chance of being sustained considering the methodologies used to transfer learning. Of equal importance is the fact that the ITEN IV project is well anchored in the priorities of many Member States of the OAS; it features two of the three pillars of the Interamerican education agenda and is aligned with the priorities of the SEDI. As we step back to conclude, one could conceivably argue that ITEN IV is a gem of a project.

Yet, despite its success, as of 1 June 2022, six months before the end of the project, there is no solid prospect of funding or uptake for a fifth phase. Thus, two questions arise, why? And what can the OAS do to remedy the situation?

There are several reasons explaining this lack of commitment to supporting a fifth phase.

The first reason is the global context and how it has affected investments in education in many Members States of the OAS (and the world). A 2021 World Bank-UNESCO report *Education Finance Watch (EFW)*<sup>52</sup> suggests that despite additional funding needs for education, two-thirds of low- and lower middle-income countries have cut their budget since the onset of the COVID 19 pandemic. This gloomy picture is aggravated by a trend of non-investment by Member States in OAS-financed projects, beyond the provision of some in-kind funding. Similarly, bilateral aid as well as some large private foundations are increasingly investing in the health sector and in addressing environmental issues. As for the US government, there is no firm evidence that it will continue investing in educational programs in developing countries.

A second reason for the perceived lack of support for future financial investment is the limited visibility of the ITEN project within the OAS and amongst Member States. A review of the ITEN communication materials and an examination of where they were shared tend to indicate that, despite recognizing the importance and the success of the project, the OAS adopted a relatively passive approach in showcasing the program in educational fora. Little time was spent to share program results with Member States (beyond distributing leaflets or referencing the website). Yet, in such a competitive environment, securing financial support for the ITEN project requires multiple tactics, starting with continuous engagement at the most senior level of the agency and the Department to bring the results of the project to the forefront of all discussions. It is unclear why this did not happen.

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<sup>52</sup> <https://unesdoc.unesco.org/ark:/48223/pf0000375577>

To be fair, the ITEN team and the SEDI leadership have taken stock of this grim reality and are multiplying efforts to rally supporters and investors. In June 2021, ITEN presented SEDI with a large-scale proposal for the creation of a Center of Excellence in Teacher Education. This plan has been more recently revised to support SEDI's resource mobilization efforts, particularly in the private sector. The ITEN team prepared multiple publicity documents to allow the Director of DHDEE to showcase ITEN's activities and results from engagement with Member States. The new ITEN Coordinator is highly active in supporting her leadership and in supporting efforts to promote ITEN.

Yet, as of May 2022, it is unclear whether these efforts will pay off and whether ITEN will find sponsors for its fifth phase. Thus, the future of ITEN is at risk.

## 5.2 Recommendations

**Recommendation 1: The ITEN project has all the attributes of a flagship project. To ensure its longer-term viability the OAS and SEDI should accelerate its action taken to secure future funding.**

*Based on finding 13*

The ITEN project is at a crossroads and the project will end on 31 December 2022. In the absence of new funding, the OAS will lose one of its flagship projects. Thus, a priority for the OAS is to actively secure financial resources to support a fifth phase. SEDI leadership is actively involved in resource mobilization in a context where education is receiving less attention than more pressing issues such as health. It has engaged in discussions with corporations and corporate foundations though, as of 31 May 2022, no concrete funding had been secured<sup>53</sup>.

At issue for the OAS is also the need to reflect more broadly on why its Member States fail to support a phase V. Interviews across the board point to an historical culture of donor-recipient relationship between the OAS and its Member States regarding financing development initiatives. While this may be the case it is worth engaging in such a analysis at a time when resources for education are scarce.

**Recommendation 2: The OAS should proactively communicate the results of ITEN and in all national and regional fora, stressing how the project reflects the priorities of the region, fosters collaboration while targeting (mostly) women.**

*Based on findings 1,2,3,4,5,6,11*

Rarely can an organization pride itself on implementing with such high success a project that is so well aligned with its members' priorities. The OAS is starting to recognize that the ITEN IV is a public good, whose results must be communicated more widely and more consistently. However, it must continue to communicate results in a systematic manner and through the most senior voices of SEDI's leadership.

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<sup>53</sup> Based on data collected in May 2022



**Recommendation 3: The OAS should take action to retain the existing ITEN team to avoid losing its human capital and jeopardize the benefits accrued through the project implementation.**

*Based on findings 13, 14*

In the absence of a contractual commitment, the OAS runs the risk of losing members of its team, a situation it faced when the former Coordinator moved to a more secured position in late 2022. Though retention of OAS program staff is highly dependent on existing funding, without the existing staff the OAS will have a much harder time securing future funds.

On a related note, depending on the focus of a potential ITEN V, if the OAS wishes to brand itself as leader in the field of STEM education, it needs to continuously bring to the team the required state-of-the-art technical support in this field. The departure of the former Project Coordinator may create a gap in in-depth STEM education knowledge which may need to be addressed in a potential phase V.

**Recommendation 4: The ITEN Team should ensure that the proposal for a potential ITEN V is attractive enough to existing and new funders, while maintaining its focus and a strong anchor in the region's priorities.**

*This recommendation is based on discussions with the OAS on the future of ITEN*

The current ITEN Coordinator is currently developing a proposal to attract new funders for a potential fifth phase of the project. The vision of a next phase has evolved in the past months and has moved away from creating a Center of Excellence – for which it would have been difficult to secure funding – to a program focused on building teachers' capacities in different areas. It is beyond the scope of the evaluation to assess the quality of the new proposal. It is wise to remember that what contributed to ITEN's success was its unique emphasis on STEM education, which is in high demand in the region. Thus, a smart balance must be considered in expanding the focus of the program, while retaining its relevance for the region.

**Recommendation 5: Similarly, in considering the future of ITEN, the project team, the OAS and the US government should consider what else, besides training, is required to ensure that the potential for high results is achieved.**

*This recommendation is based on discussions with the OAS on the future of ITEN*

We noted in earlier sections that results were highly dependent on whether teachers or governments **decided to do something further to acquiring STEM skills**. Thus, any future ITEN project and any future funding by the US government should consider what additional initiative is required to generate government action upon training completion. For the project team, this could include tracer studies to be done six to nine months upon training completion to identify and potentially resolve bottlenecks in implementing results acquired. For the OAS and for the US government, this could entail investing in projects aimed at raising awareness for STEM education amongst Teacher Fellows' supervisors or principals (to encourage them to invest, even minimally, in STEM education train the trainer). Other types of initiatives for funders could include funding in research on economic returns of STEM education (as hard evidence to inform Minister's decisions and setting of national priorities).



Considering the need to inject money in STEM education, alternate projects could consist of regional convening of Ministers of Education and Ministers of Finance where tangible cost benefits of STEM education can be shared. Regardless of the complementary types of projects that are selected, the evaluation team posits that limiting investments to training in STEM education will not be enough to reach the economic potential that can be envisaged for LAC countries.

# Appendix I Terms of Reference



GENERAL SECRETARIAT OF THE ORGANIZATION OF AMERICAN STATES

DEPARTMENT OF PROCUREMENT SERVICES AND MANAGEMENT OVERSIGHT(DPMO)

## Call for Resumes

**External Evaluation of the Project:** “Inter-American Teacher Education Network Phase 4” SID-1805

**Type of Appointment:** Individual consultancy

**Organizational Unit:** Department of Procurement Services and Management Oversight(DPMO)

**Duration:** approximately 5 months (40 non-consecutive days).

**Consulting Fee:** based on experience, education, and skills

**Duty Station:** Washington DC, Member Countries, and consultant’s place of residence

**Deadline:** no later than 25 September 2021 to Enrica De Pasquale at [edepasquale@oas.org](mailto:edepasquale@oas.org)

**Profile:** The Consultant must demonstrate a minimum 10 years of expertise in the application of quantitative and qualitative methodologies in the evaluation of projects and programs. Experience in education policy and/or institutional strengthening will be a plus. The Consultants should also have attained a graduate degree in public policy, economics, management, or related area; and experience working in Latin America and the Caribbean and should have knowledge and/or experience in the Kirkpatrick evaluation method. The Consultant must be proficient in Spanish and English, both oral and written. Experience working with an international organization in the Americas and in the evaluation of similar projects is a plus.

## BACKGROUND

- 1.1 This assessment is part of the DPMO's greater efforts to conduct formative and summative evaluations of projects and programs executed by the OAS. Such efforts, coordinated and supervised by the DPMO, began over 13 years ago with the evaluation of initiatives financed by the Spanish Fund for OAS and has been extended to operations financed by other donors, such as Canada and the United States of America. These evaluations, in addition to systematizing and documenting the results of the interventions, have the goal of capitalizing on these experiences for the improvement of future project and program formulations and designs, and institutionalizing best practices in monitoring and evaluation within the Organization.

### **The Inter-American Education Network (ITEN).**

- 1.2 With the support of the US Permanent Mission the Executive Secretariat for Integral Development (SEDI), through the Department of Human Development and Education (DHDE), executed the Inter-American Teacher Education Network (ITEN). The ITEN is a network of individuals from different sectors throughout the Americas, who are involved or interested in the teaching profession. ITEN's mission is to contribute to the improvement of the quality of education in the Americas<sup>1</sup> by promoting: i) knowledge exchange; ii) capacity building; and iii) technical assistance, through the use of virtual tools and in-person activities.
- 1.3 Despite the considerable improvement in the access to primary and secondary education in recent years, the Americas still faces challenges in achieving a high-quality education for everyone. To improve this situation, the OAS through the ITEN program focuses on teachers as the core of education, and therefore understand that they play a key role in preparing young generations to act in an interconnected world. Thus, ITEN promotes collaboration and interaction among Ministries of Education and among teachers of the Americas, hoping that participants will take the lead and learn from each other by exchanging ideas, generating positive change towards the professionalization of teachers, and thus contributing to the improvement of education.
- 1.4 The ITEN started in 2004 as the Hemispheric Project on Teacher Education, and for the last 15 years it has forged relationships with a dozen organizations, including UNESCO, PREAL, Teachers Without Borders and the IDB, with the aim at improving all aspects of the teaching profession, putting in the hands of policymakers a vast body of successful practices, programs and experiences compiled in a Regional Knowledge Bank, and

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<sup>1</sup> Among other beneficiaries: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and The Grenadines, Suriname, and Uruguay.

equipping teachers with innovative methodologies and pedagogies to help students learn more effectively, develop critical thinking skills and ultimately become active citizens and agents of change in their communities.

- 1.5 To this end the ITEN works with two main target audiences: K-12 teachers; and policymakers and officials of Ministries of Education responsible for teacher policies. ITEN's phase 4 sought to deepen partnerships and cooperation with countries and organizations in the region in order to further strengthen country ownership of processes and activities as a means of further enhancing the sustainability of the program.

#### **ITEN Phase 4**

- 1.6 The objective of Phase 4 is to increase capacity of education leaders to work collaboratively to implement solutions to shared problems of policy or practice in Science, Technology, Engineering and Mathematics STEM teacher education in early childhood and secondary levels. To this end the project disbursed a budget of US\$2.8 million, including the OAS in-kind contribution, and executed the following 4 outputs/components:
- i) Use of ITEN's collaborative mechanisms to identify or implement potential solutions to a common challenge of policy or practice in STEM teacher education by Ministries of Education.
  - ii) Provide a 2-year experience of online and face-to-face professional development in STEM that takes into consideration issues surrounding equitable participation of girls and women in STEM.
  - iii) Increase provision of quality STEM professional development to teachers.
  - iv) Project planning and monitoring and evaluation.

#### **OBJECTIVE OF THE CONSULTANCY**

- 2.1 The objective of the Consultancy is to evaluate the relevance, efficiency, effectiveness, and sustainability of SID-1805 project, regarding the effectiveness of the work done by the ITEN. The evaluation will explicitly focus on the delivery of the main Outputs, and the Intermediate and Final Outcomes for the project.

#### **A. Scope of the evaluation.**

- 2.2 To achieve the objective the Consultant shall:
- i) Conduct a summative evaluation in order to identify the main achievements and results of the project.
  - ii) Determine the efficiency and effectiveness of the project as best reflected in the available results to date.
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- iii) Critically analyze the formulation, design, implementation, and management of the project and make recommendations as needed.
- iv) Assess the institutional and financial sustainability of the interventions financed by the project.
- v) Document lessons learned related to the formulation, design, implementation, management, and sustainability.
- vi) Make recommendations, as appropriate, to improve the formulation, design, and implementation for future similar interventions.
- vii) Assess if and how the project addressed the crosscutting issue of gender perspective and to what results.
- viii) Conduct, as best possible, a proper Cost-Benefit Analysis by determining the internal rate of return and net present value of the investment.
- ix) Assess the results of the training supported by the project using the Kirkpatrick's training evaluation model.
- x) Assess the success or failure of the implementation of the recommendations issued by the evaluation of phase 3.

2.3 In addition to the above, the consultancy will make every attempt to answer the following performance questions:

- i) How was the project's implicit Theory of Change effective? Explain.
  - ii) Were the project's objectives achieved (include a matrix to establish achievement and justification)?
  - iii) Are the project's indicators S.M.A.R.T.?
  - iv) Were the identified outcome indicators appropriate to measure success?
  - v) Are the project's achievements sustainable institutionally and financially?
  - vi) Did the project team apply results-based management principles from inception to conclusion? Please describe which ones and how.
  - vii) Was the monitoring mechanism used as an efficient and effective tool to follow-upon the progress of project's actions?
  - viii) Were there any unforeseeable/not planned results or outcomes? Please describe and explain.
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## B. Information sources.

2.4 Among other sources the Consultant will review the following:

- i) Project profile and project document.
- ii) Progress implementation reports.
- iii) Project indicators identified and used throughout the execution.
- iv) Products derived from the implementation of the project and means of verification.
- v) Any other document deemed relevant for the completion of the work.

## C. Stakeholders.

2.5 Among other stakeholders the Consultant will consider the following:

- i) Project Team.
- ii) Member States.
- iii) Local and national counterparts, including: Antigua State College; Instituto Nacional de Formación Docente (INFoD); The University of the West Indies, Cave Hill Campus; Secretariat of The Eastern Caribbean Joint Board of Teacher Education (JBTE); Centro de Modelamiento Matemático de la Universidad de Chile; Cyril Potter College of Teacher Education in Guyana; Quisqueya University Haiti; Western Caribbean Joint Board of Teacher Education in Jamaica; Clarence Fitzroy Bryant College in St. Kitts; Consejo de Formación en Educación de Uruguay; and Ministries of Education from the participating countries.
- iv) USOAS and Donors.
- v) Department of Procurement Services and Management Oversight, OAS.
- vi) Beneficiaries, individuals, and Member States.

## ACTIVITIES

3.1 This consultancy will be coordinated and supervised by the DPMO.

3.2 The evaluation process will take a participatory approach and take account of the views of all key stakeholders. In general, the evaluation will be based on survey results, hard data, interviews, document analysis and use of other relevant evaluation instruments (i.e., focus groups, etc.), as required. All conclusions and recommendations have to be based on evidence, not opinion.

## A. Phase I: Preparatory activities.

3.3 To achieve the objectives of the Terms of Reference, the consultancy shall carry out the following activities, without prejudice to other tasks that are necessary to complete the work:

- i) Conduct initial conference calls with key stakeholders such as members of the Project Team and the US Permanent Mission to the OAS officials; and assess more accurately the scope of the work and request the necessary information to perform effectively. As a result, the consultancy will submit a preliminary workplan to the DPMO, the workplan will include the description and chronology of the activities to be carried out, the reports to be submitted and the deliverables of the evaluation.
- ii) Develop an Evaluation Framework (EF) after conducting the first wave of interviews, which will help to determine if the project was implemented efficiently and effectively, and generated the expected results. The EF shall include the following sections among others:
  - a) A description of the methodology or design of the evaluation strategy, including the sampling framework to be used for the collection of data and the evaluation matrix. The methodology to be used to conduct the Cost-Benefit Analysis. The evaluation methodology must consider qualitative and quantitative measurements.
  - b) Data collection protocols and analysis of information.
  - c) The identification of data collection instruments.
  - d) The identification and measurement of output and outcome indicators (intermediate and final) to measure the project's efficiency and effectiveness, in addition to those previously identified during the design of the project, if any. Both groups of indicators are expected to include their definition and methodologies for the collection and calculation.
  - e) The instruments for the collection of information and related materials.
  - f) The updated workplan for the consultancy, including the collection, analysis, and production of reports (see paragraph 3.3 (i)).
  - g) A proposal of the table of contents of the final report, among others.

#### **B. Phase II: Collection and analysis of information, and Midterm Report.**

- iii) Review all the relevant documentation including those produced during the formulation and design of the project.
- iv) Conduct interviews and collect information from additional key stakeholders, including: government officials, partners, and direct and indirect beneficiaries, among others (see paragraph 2.5).
- v) Conduct interviews and focus groups to validate the implicit chain of results (Logic Model) for the project, by determining if it was adequate and valid for the expected and actual results.

- vi) Establish the project's efficiency and effectiveness, identifying lessons learned and making recommendations for future executions. This assessment should include a robust Cost-Benefit Analysis of the operation (CBA), by: identifying and quantifying the social and economic costs and benefits of the program; collecting the necessary data to validate the CBA proposal; conduct a literature review to support theoretically the social and economic costs and benefits and monetize them; and estimate the returns to the investment.
- vii) Assess the management of the project in the use of planning and implementation tools, such as annual operations plans, logical framework, and project monitoring reports among others.
- viii) Assess the technical and economic feasibility of the project, including the sustainability of its benefits.
- ix) Determine the relevance of the criteria used for the targeting of beneficiaries; including member countries and agencies benefiting from the project and make appropriate recommendations for similar initiatives in the future.
- x) Analyze how and if the project incorporated a gender perspective approach in the execution of its components, and if there were any such efforts, determine how consequential they were. Were they relevant at all?
- xi) Measure the project's performance in terms of efficiency and effectiveness. The consultancy shall review and suggest adjustments to the indicators identified in the Logical Framework. In addition, the consultancy shall identify, propose, and measure indicators that were not considered in the design. The consultancy shall analyze the extent to which the expected results were achieved, as well as identify unplanned results that may have occurred.
- xii) Produce a Midterm Report describing the progress of the evaluation and the findings to date. The report will be accompanied by a Power Point presentation.
- xiii) Conduct a virtual mission to OAS headquarters to present the Midterm Report.

### **C. Phase III: Presentation of Final Report.**

- xiv) Produce a Final Report analyzing and describing the execution, outputs, and outcomes of the supported actions; Cost-Benefit Analysis, lessons learned, recommendations and conclusions; a section for sustainability and beneficiaries, among others. The report will be accompanied by a Power Point presentation.
  - xv) Conduct a virtual mission to OAS headquarters to present the Final Report.
  - xvi) The Consultant will produce and deliver the following documents taking into consideration each of the activities described in the above section:
  - xvii) A detailed preliminary workplan and the evaluation Framework within 15 days of signing the contract.
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- xviii) A Midterm Report on the progress of the consultancy including, a revised Logical Framework, the theory of change, and a Power Point to be presented virtually in OAS headquarters at a date to be agreed upon.
- xix) Final Evaluation Report including a Cost-Benefit Analysis, all products mentioned above and a Power Point Presentation to be presented virtually in OAS headquarters at a date to be agreed upon.

#### TIMEFRAME & PAYMENT SCHEDULE

- 5.1 It is expected that the consultancy will require a total of 40 non-consecutive working days between September 2021 and February 2022.
- 5.2 The payment schedule is as follows:
  - 15% Upon signing the contract.
  - 15% Upon delivery of a detailed Workplan and Evaluation Framework
  - 35% Upon delivery of a Midterm Report accompanied by a Power Point presentation.
  - 35% Upon delivery of the Final Report accompanied by a Power Point presentation

#### EVALUATION PREMISES AND APPLICABLE REGULATIONS

- 6.1 In addition to the clauses contained in the contract, the evaluation team shall comply with the OAS Code of Ethics and UNEG evaluation norms and standards and protect personal data, to uphold and promote:
  - i) **Anonymity and confidentiality.** - The evaluation shall respect the right of individuals to provide information, ensuring their anonymity and confidentiality and guaranteeing the security of personal data that may be collected during the evaluation.
  - ii) **Integrity.** - The evaluator will have the responsibility to highlight issues not specifically mentioned in the terms of reference if this is necessary to obtain a more complete analysis of the program.
  - iii) **Independence.** - The evaluator shall guarantee their independence from the evaluated interventions. In order to avoid possible conflicts of interest, the evaluator shall not have been linked at any time to the program implementation nor have participated in the implementation of other projects or programs related to the evaluated program.
  - iv) **Incidents.** - In case of problems arising during the fieldwork or in any other phase of the evaluation, they shall be immediately communicated to the Procurement Services and Management Oversight Department. If not, in no case the existence of such problems can be used to justify the non-obtainment of the results established in these terms of reference.

- v) **Validation of the information.** - It is the evaluator's responsibility to guarantee the veracity of the information gathered for the elaboration of the reports, and in the last instance, they will be responsible for the reliability of the information presented in the evaluation.

#### PROCUREMENT PROCESS

- 7.1 The contracting will follow the procurement processes outlined by OAS tender regulations, ensuring the application of competitiveness and transparency principles.
- 7.2 The Organization of American States does not discriminate against any individual on the basis of race, color, marital status, religion, age, gender, disability, sexual orientation, gender identity, or status as a parent.
- 7.3 Consultants interested in participating in the selection process should send the expression of interest and CV no later than 25 September 2021 to Enrica De Pasquale at [edepasquale@oas.org](mailto:edepasquale@oas.org)
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## Appendix II Evaluation Framework

EVALUATION OF ITEN IV - EVALUATION MATRIX				
AREA OF INQUIRY	QUESTION	INDICATORS	SOURCE OF DATA	DATA COLLECTION APPROACH
<b>1.0 Effectiveness</b>				
<b>1.1 Results – Achievement of Activities</b>	<p>1.1.1 To what extent did ITEN IV conducted its planned activities, including:</p> <ul style="list-style-type: none"> <li>Training Project teams from Ministries in STEM Teacher training</li> <li>Deliver three seminars on STEM education policy and practice</li> <li>Organize up to ten (10) cooperation exchanges amongst Ministries of education</li> <li>Support virtual communication among Ministries</li> <li>Build a cohort of 30 STEM Teacher Fellows</li> <li>Provide a 2-year experience of professional development in STEM through a gender and inclusive approach</li> </ul>	<p>Degree of achievement of activities as of November 2021</p> <p>Quality assessment of activities as per participants and standards</p>	<p>Project RPPI</p> <p>Project Status reports</p> <p>Selected participants in ITEN activities</p> <p>ITEN Website</p>	<p>Document review</p> <p>Interviews</p> <p>Website observation</p>

EVALUATION OF ITEN IV - EVALUATION MATRIX				
AREA OF INQUIRY	QUESTION	INDICATORS	SOURCE OF DATA	DATA COLLECTION APPROACH
	<ul style="list-style-type: none"> <li>Support community-based leadership activities of Fellows</li> <li>Host events for Ministries showcasing STEM resources available through ITEN</li> <li>Award up to ten (10) Seed grants to support the institutionalization of evidence-based professional development.</li> <li>Update the content of the ITEN Website and online resources in coordination with the OAS Communication Unit.</li> </ul>			
<b>1.2 Results – Effectiveness of Training Provided</b>	1.2.1 To what extent were ITEN training sessions well designed, implemented and follow-up? <sup>54</sup>	<p><b>Illustrative indicators<sup>55</sup></b></p> <p>Level 1 – 80% of participants report high or very high degree of satisfaction about training received</p> <p>Level 2 – 80% of participants demonstrate a 20% increase in knowledge presented during the session</p> <p>Level 3 – 80% of participants report using knowledge acquired through training in their professional activities</p>	<p>Training and workshop evaluation sheets</p> <p>RPPI</p> <p>Participant perceptions and self-report</p>	<p>Document review</p> <p>Interviews with ITEN team and selected training providers</p>

<sup>54</sup> This question and related indicators are also addressed under questions 1.3.1, 1.3.2, 1.3.3 Document review

<sup>55</sup> These indicators are examples of changes observed during a training session. Considering that ITEN IV delivered activities other than training, these indicators will be adapted to these activities, always seeking to identify changes in satisfaction, learning, and behaviours.

## EVALUATION OF ITEN IV - EVALUATION MATRIX

AREA OF INQUIRY	QUESTION	INDICATORS	SOURCE OF DATA	DATA COLLECTION APPROACH
		Level 4 – 75% of participants report that new knowledge applied is contributing to solving or addressing a STEM related issue on the job		
<b>1.3 Results – Achievement of Outputs</b>	1.3.1 Did Ministries of education use ITEN's collaborative mechanisms to identify potential solutions to a common challenge in STEM education? How?	<b>34 Cooperation Exchange</b> and Seed Grant portfolios mention what was learned.  <b>66% of ministries</b> provided examples new ideas acquired	RPPI reports Ministries stakeholders	Document review Interview/focus groups
	1.3.2 Have ITEN Teacher Fellows increased their capacities in STEM teaching?	<b>All Seminar workshops</b> participants increased their content understanding of STEM topics by 20%.  <b>At least 30 Teacher Leadership</b> Fund portfolios published mention learning acquired on solutions to local problems of policy or practice.  <b>At least 80% of Teacher Fellows</b> state that they have increased their use of evidence-based actions promoting inclusion of boys and girls.  <b>At least 66% of Teacher Fellows</b> demonstrate improvement in gender-equitable instructional practice.  <b>Teacher Fellows increased their self-efficacy</b> as STEM teachers by an average of 0.5 points.	RPPI reports Teacher Leadership Fund portfolios RPPI reports Teacher Fellows	Document review Interview/focus groups with Teacher Fellows
	1.3.3 Have Ministries of Education increased their provision of quality Stem professional development to teachers?	<b>At least 15,000 educational leaders</b> who registered for ITEN professional development reported that they learned about the opportunity through local/national agencies	RPPI reports Sample of Seed grant awardees	Interviews Document review

EVALUATION OF ITEN IV - EVALUATION MATRIX				
AREA OF INQUIRY	QUESTION	INDICATORS	SOURCE OF DATA	DATA COLLECTION APPROACH
		<b>At least 30 Seed Grant awardees</b> explicitly include in their ITEN project evidence-based professional development supporting STEM Teacher education	Sample of educational leaders <sup>56</sup>	
	1.3.4 Has ITEN been planned, monitored, and evaluated according to plans?	<b>Evidence of submission of semi-annual</b> progress reports approved by DPMO and donor.  <b>80% of recommendations</b> from the verification reports have been incorporated in ITEN IV.	RPPI reports DPMO Project status reports Perception of DPMO staff	Document review Interviews with ITEN team, DPMO
<b>1.4 Results – Unforeseeable Results</b>	1.4.1 Has there been any unforeseeable results during ITEN IV implementation?	<b>Evidence of unforeseeable</b> results as reported by participants and project TEAM.	Sample of Project stakeholders RPPI	Document review Interviews
<b>1.5 Results – Implementation of ITEN III Evaluation Recommendations</b>	1.5.1 To what extent were recommendations from the ITEN III evaluation, that were accepted by the OAS, implemented?	<b>80% of approved</b> recommendations of ITEN III evaluation reports have been incorporated into ITEN IV.	RPPI Project Status reports	Document review Interviews
<b>2.0 Efficiency</b>				
<b>2.1 Resource Utilization</b>	2.1.1			

<sup>56</sup> This may be unfeasible considering the scope of work. To be discussed with OAS

EVALUATION OF ITEN IV - EVALUATION MATRIX				
AREA OF INQUIRY	QUESTION	INDICATORS	SOURCE OF DATA	DATA COLLECTION APPROACH
<b>3.0 Project Formulation and Design</b>				
<b>3.1 Theory of Change</b>	3.1.1 Is ITEN supported by a robust Theory of Change?	Logical flow between activities, output, and outcomes.	Project Concept Note	Document review
		The project ToC articulates clear and measurable assumptions	OAS Project Team DPMO team	Interview
<b>3.2 Schedule of implementation</b>	3.2.1 Is the schedule of implementation of the project realistic?	Schedule of events is reported to be appropriate	Project team Country stakeholders	Document review Interview
<b>3.3 Risk Assessment</b>	3.3.1 Were project risks identified and mitigated?	Existence of a risk mitigation strategy/approach Evidence that risks have been addressed	Risk Management document Project team DPMO	Document review Interview
<b>4.0 Project Implementation and Management</b>				
<b>4.1 Use of RBM Approach</b>	4.1.1 Did the project team apply results-based management principles from inception to conclusion?			
	4.1.2 Were outcome indicators appropriate to measure success?	Project indicators are S.M.A.R.T	DPMO Project team Project log frame	Document review Interviews
<b>4.2 Timeliness and Adherence to Budget</b>	4.2.1 Was the project managed on time and within budget?	Alignment between planned versus actual completion of project activities Project compliance to planned budget	RPPI Project financial reports	Document review

EVALUATION OF ITEN IV - EVALUATION MATRIX				
AREA OF INQUIRY	QUESTION	INDICATORS	SOURCE OF DATA	DATA COLLECTION APPROACH
			DPMO Project Team	Interviews
5.0 ITEN IV Activities - Institutional and Financial Sustainability				
<b>5.1 Institutional Sustainability</b>	5.1.1 To what extent will project results (outcomes) be sustained by Ministries upon project completion?			
6.0 Gender Integration				
<b>6.1 Gender Integration</b>	6.1.1 To what extent were gender consideration included in ITEN formulation and design?	ToC and project design include results targets for both females and males  Project design is tailored to ensure participation of both males and females	Project Team Project beneficiaries RPPI	Document review Interviews
	6.1.2 To what extent is the project reporting on project results as they affect both males and females?	Results are reported in a disaggregated manner (female/males)  Factors limiting both female and/ or male participation in project are reported and addressed	Project Team Project beneficiaries RPPI	Interviews Document reviews
7.0 Cost-Benefit Analysis				
<b>7.1 Cost Benefit of ITEN IV</b>	7.1 Is there a sound business case for the ITEN IV project? Considering direct, indirect, intangible and opportunity costs of ITEN IV as well as costs of potential risks	Positive ratio of costs (direct, indirect, intangible, and opportunity costs and costs of potential risks) vs. benefits (direct, indirect)	Projects reports Project stakeholders  Literature review of comparable projects	Document review Interviews



EVALUATION OF ITEN IV - EVALUATION MATRIX				
AREA OF INQUIRY	QUESTION	INDICATORS	SOURCE OF DATA	DATA COLLECTION APPROACH
<b>8.0 Lessons Learned</b>				
What lessons can be learned from the planning and implementation of ITEN IV?				
<ul style="list-style-type: none"> <li>Project rationale, design and planning and implementation</li> </ul>				
<b>9.0 Recommendations</b>				
What does the evaluation team recommend for the completion of ITEN IV and any potential investment in subsequent phases of ITEN?				
<ul style="list-style-type: none"> <li>Recommendations to the OAS</li> <li>Recommendations to donors</li> </ul>				

## Appendix III Documents Consulted

TYPE	DOCUMENT
<b>Budget</b>	<ul style="list-style-type: none"> <li>Budget pre prodoc <i>[Excel sheet]</i></li> <li>Copy of ITEN Budget Changes 1 Feb 2021_RV, February 1, 2021 <i>[Excel sheet]</i></li> <li>ITEN Budget Changes 23 Feb 2021_RV, February 23, 2021 <i>[Excel sheet]</i></li> <li>ITEN New approved Budget – 6 May 2020, May 6, 2020 <i>[Excel sheet]</i></li> <li>SID1805_Budget_May2021, May 2021 <i>[Excel sheet]</i></li> <li>SID1805 Inter-American Teacher Education Network Phase 4 <i>[Excel sheet]</i></li> <li>SID1805 ITEN Budget Changes 6 May 2020, May 6, 2020 <i>[Excel sheet]</i></li> </ul>
<b>Contractual</b>	<ul style="list-style-type: none"> <li>Vieyra TORs Jan to May 2022, <i>Vieyra, R.</i></li> </ul>
<b>Finances</b>	<ul style="list-style-type: none"> <li>Financial Statement SID1805_USOAS18-11_MAY_21_INTERIM_FO certified, July 13, 2021, <i>OAS</i></li> <li>FS_SID1805_USOAS18-11_MAY_20_INTERIM_FO2, September 18, 2020, <i>OAS</i></li> <li>FS_SID1805_USOAS18-11_NOV_20_INTERIM_PG certified, March 17, 2021, <i>OAS</i></li> <li>SID1805 financial report RPPI 1 07-2019, July 8, 2019, <i>OAS</i></li> <li>SID1805 ITEN IV financial report second RPPI, April 3, 2020, <i>OAS</i></li> </ul>
<b>Logical Framework Matrix</b>	<ul style="list-style-type: none"> <li>ITEN LFM 11 Feb 2021, April 28, 2020</li> <li>SID1805 ITEN COVID-19 LFM update 04-2020, April 28, 2020</li> <li>SID1805_LFM_May2021, May 4, 2021</li> <li>SID1805_LFM_May11_2021, May 11, 2021</li> </ul>
<b>Progress Report</b>	<ul style="list-style-type: none"> <li>RPPI Advancements – November 2021, November 2021, <i>ITEN</i></li> <li>SID1805_Fifth Narrative Report - RPPI, November 21, 2020 – May 20, 2021, <i>OAS</i></li> <li>SID1805 First RPPI 07-23-2019, August 23, 2019, <i>OAS</i></li> <li>SID1805_Fourth Narrative Report – RPPI, May 21, 2020 – November 20, 2020, <i>OAS</i></li> <li>SID1805 ITEN IV – Fourth Narrative Report – RPPI, May 21, 2020 – November 20, 2020, <i>OAS</i></li> <li>SID1805 RPPI II, May 21, 2019 – November 20, 2019, <i>OAS</i></li> <li>SID1805 RPPI 3, November 21, 2019 – May 20, 2020, <i>OAS</i></li> <li>WordRPPI November 2021, May 21, 2020 – November 20, 2022, <i>OAS</i></li> </ul>
<b>Project Document</b>	<ul style="list-style-type: none"> <li>SID1805 – INTER-AMERICAN TEACHER EDUCATION NETWORK PHASE 4, March 11, 2019, <i>OAS</i></li> </ul>
<b>Project Profile</b>	<ul style="list-style-type: none"> <li>SID1805 Inter-American Teacher Education Network Phase 4, November 16, 2018, <i>OAS</i></li> </ul>
<b>Project Status Report</b>	<ul style="list-style-type: none"> <li>SID1805_Fifth Verification Report, July 13, 2021, <i>DPMO</i></li> <li>SID1805 First Verification Report 08-06-2019, August 6, 2019, <i>DPMO</i></li> <li>SID1805 First Verification Report 07-23-2019, July 23, 2019, <i>DPMO</i></li> <li>SID1805 Fourth Verification Report, March 22, 2021, <i>OAS</i></li> <li>SID1805 ITEN IV – Fourth Verification Report, March 22, 2021, <i>OAS</i></li> <li>SID1805 Second Verification Report, April 6, 2020, <i>DPMO</i></li> <li>SID1805 Third Verification Report, September 22, 2020, <i>DPMO</i></li> </ul>
<b>Risk Management</b>	<ul style="list-style-type: none"> <li>SID1805 Risk Matrix Update 30 April 2020, April 30, 2020</li> </ul>

## Appendix IV

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## Appendix V Sample Interview Protocol

### English Group Interview 5

#### NATIONAL MINISTRY – SECONDARY

##### Background

At the request of the US Permanent Mission, the Department of Procurement Services and Management Oversight (DPMO) of the Organization of American States is coordinating an external evaluation of the project *The Inter- American Teacher Education Network (ITEN) phase IV*. This evaluation is part of the DPMO greater efforts to conduct formative and summative evaluations of projects and programs executed by the OAS. These evaluations, in addition to systematizing and documenting the results of the interventions, have the goal of capitalizing on these experiences for the improvement of future project and program formulations and designs, and institutionalizing best practices in monitoring and evaluation within the Organization. In the context of this evaluation, we interview different stakeholders that were involved in the project in order to assess the relevance, effectiveness, efficiency and sustainability of the project.

*You have been identified as a key stakeholder in the ITEN IV Project and we thank you for your participation. It is highly valued!*

##### Modalities

The group interview will be led by Marie-Hélène Adrien and will last **1 hour**.

Everything you say will remain confidential. We will not refer to your name in the report and only aggregated information will be used as evidence to the evaluation findings. One of the key objectives of the evaluation is learning so we encourage you to engage and to share your experience.

If you wish to have further details about the evaluation please contact Marie-Hélène Adrien, the evaluation Team Leader at [mhadrien@gmail.com](mailto:mhadrien@gmail.com).

##### Discussion themes

1. Please describe the activities you undertook with the financial support of ITEN IV (Teacher Fellowship Program and project with Seed Grant)
2. In enrolling in the Teacher Fellowship program what specific educational challenge (s) or problems were you hoping to address in your country?
3. To what extent did the project contribute to addressing or solving these educational problems?

4. In designing and implementing your project, to what extent did you ensure participation of both men and women?
5. What tangible benefits derived from the project? For instance, personal benefits for you as a professional; benefits to the community, etc.
6. What factors contributed to the success of your project? What factors constrained you in implementing the project?
7. How do you intend sustaining the results that you have achieved upon completion of the ITEN financial support?
8. (If you can) How would you characterize the way the ITEN project was managed by the ITEN team at the OAS?

Thank you for your collaboration!

## Spanish Individual Interview Group 11 (B)

### Delmy Angélica Duarte Interview

#### CONGLOMERATE PROJECT TEAM

##### Background

At the request of the US Permanent Mission, the Department of Procurement Services and Management Oversight (DPMO) of the Organization of American States is coordinating an external evaluation of the project *The Inter- American Teacher Education Network (ITEN) phase IV*. This evaluation is part of the DPMO greater efforts to conduct formative and summative evaluations of projects and programs executed by the OAS. These evaluations, in addition to systematizing and documenting the results of the interventions, have the goal of capitalizing on these experiences for the improvement of future project and program formulations and designs, and institutionalizing best practices in monitoring and evaluation within the Organization. In the context of this evaluation, we interview different stakeholders that were involved in the project in order to assess the relevance, effectiveness, efficiency and sustainability of the project.

*You have been identified as a key stakeholder in the ITEN IV Project and we thank you for your participation. It is highly valued!*

##### Modalities

The group interview will be led by Victoria Alegre and will last **1 hour**.

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Everything you say will remain confidential. We will not refer to your name in the report and only aggregated information will be used as evidence to the evaluation findings. One of the key objectives of the evaluation is learning so we encourage you to engage and to share your experience.

If you wish to have further details about the evaluation please contact Marie-Hélène Adrien, the evaluation Team Leader at [mhadrien@gmail.com](mailto:mhadrien@gmail.com).

### **Discussion themes**

1. Please describe the activities you undertook with the financial support of ITEN IV (i.e., Project Team process, Seed Grants, Teacher leadership activities, etc.).
2. In a undertaking each of these activities, what specific educational challenge (s) or problems were you hoping to address?
3. What worked well / what worked less well in these activities, in particular your collaboration with other members of the Conglomerate?
4. How do you intend sustaining the results that you have achieved upon completion of the ITEN financial support?
5. (If you can) How would you characterize the way the ITEN project was managed by the ITEN team at the OAS?

Thank you for your collaboration!

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## Appendix VI Logical Framework Matrix



### Inter-American Teacher Education Network Phase 4 SID1805

#### Logical Framework Matrix

NARRATIVE SUMMARY OF OBJECTIVES AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<b>GOAL</b>  To contribute to the increase of the quality of STEM education in the Americas for all students.	N/A	N/A	N/A
<b>PURPOSE</b>  Increased capacity of education leaders* to work collaboratively to implement solutions to shared problems of policy or practice in STEM teacher education in early childhood and secondary levels. *Educational leaders refers to participating educational policymakers and educators.	1. By the end of Phase 4, at least 50% of participating Ministries increased the effectiveness of their collaborations or achieved “highly effective” collaborations with other institutions outside of their own Ministry who are in the ITEN network to identify or implement a modified or new policy or practice in teacher education.*This is a floating indicator, and the total number of participating Ministries will change annually (with many Ministries participating across	1. Quality Measure Partnership Effectiveness Continuum (QMPEC) rubric scores for each participating Ministry: The QMPEC is a holistic tool used annually on Ministries’ collaborations that includes an analysis of the Project Team portfolio (vision & goals, log, timeline, media materials, virtual gathering observations, interviews, and MOUs) and any resulting products from Collaboration Exchanges and/or Seed Grants.	Educational leaders in the Americas will reach within and beyond their governmental infrastructures to create connections to self-sustaining resources (i.e., funding and evidence-based practices and policies).  Educational leaders in the Americas will continue to be committed to the improvement in

NARRATIVE SUMMARY OF OBJECTIVES AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
	<p>multiple years). As such, year 1 will account for 33%, year 2 will account for 66%, and year 3 will account for 100% of expected Project Teams.</p> <p>2. By the end of Phase 4, at least 10 participating Ministries of Education tested or implemented a modified or new policy or practice related to quality teaching in STEM in early childhood or secondary education (at least 5 by the end of year 2, and at least 5 more by the end of year 3).</p> <p>3. By the end of Phase 4, no less than 50% of any Project Team stakeholder group (teachers, teacher educators, and Ministry representatives) reported or demonstrated individual contributions to or benefits from Project Teamwork related to shared problems of policy or practice (a minimum of 40% of each group by the end of year 2, and at least 50% of each group by the end of year 3). *Data disaggregated by gender. *This is a floating indicator, and the total number of participating stakeholders and their roles change annually. This indicator will be newly evaluated starting in May of each year.</p>	<p>QMPEC will be applied for the “life of participation” of a Ministry, which could be as short as 6 months or as long as 30 months.</p> <p>2. Summary analysis of Health of the Network Survey (HNS) responses supported by artifacts from Project Team portfolios: The HNS items for analysis will include Question 1 (a yes/no answer) about if new policies or practices have been identified, tested, or implemented. Artifacts that support responses to the HNS items will be collected from qualitative responses on surveys, Project Team portfolios, and might include concrete products accomplished as a result of participation in Project Teams, Cooperation Exchanges, and/or Seed Grants.</p> <p>3. Summary analysis of Health of the Network Survey (HNS) responses supported by artifacts from Project Team portfolios: The HNS items for analysis will include Questions 8 and 9 (which are narrative questions about how the respondent has personally contributed to the Project Team). Artifacts (quotes, photographs, , videos, documents, news articles,</p>	<p>STEM education regardless of shifts in governmental policy.</p>



NARRATIVE SUMMARY OF OBJECTIVES AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
		blog, etc.) that support responses to the HNS items will be collected from annual virtual focus group protocols that will be held separately with stakeholder groups (teachers, teacher educators, and Ministry representatives).	
<p><b>OUTPUTS</b></p> <p>Ministries of Education have used ITEN's collaborative mechanisms to identify or implement potential solutions to a common challenge of policy or practice in STEM teacher education.</p> <p>A community of STEM teacher leaders (ITEN Teacher Fellows) have increased their capacity for quality STEM teaching (competence and self-efficacy), particularly in physics at the early childhood (ages 3-6) and secondary (ages 15-18) levels, with special attention to the inclusion of women and girls in STEM.</p> <p>Ministries of Education have increased their provision of quality STEM professional development to teachers. Project Planning, Monitoring and Evaluation</p>	<p>1.1 At least 66% of participating representatives of Ministries provided examples of new ideas they acquired from ITEN activities (Project Teams, Teacher Fellowship, Seminar, digital events and programs, etc.) that they identified to help solve shared problems of policy or practice by December of each year. *Data disaggregated by gender. *This is a floating indicator, and the total number of participating stakeholders and their roles change annually. This indicator will be newly evaluated in December of each year.</p> <p>1.2 At least 8 Cooperation Exchange and Seed Grant portfolios published mentioning what was learned about the investigation, testing, and/or implementation of possible solutions to shared problems of policy or practice (5 by April 2021 and another 3 by December 2021).</p> <p>2.1 All Seminar workshop- attending Teacher Fellows increased their content understanding of workshop-</p>	<p>1.1 Summary of Health of the Network Survey (HNS) and Activity Survey responses: The HNS item (for Project Team participants) for analysis includes Question 6 (which includes a narrative question about what new policies or practices have been identified, tested, or implemented, and how they have been tested or implemented). The Activity Survey item (for events for members of the public) for analysis will include Question 6 (which is a narrative question about what new ideas were acquired from the experience).</p> <p>1.2 Summary of results from Cooperation Exchange and Seed Grant portfolios: These portfolios will include the project work plans, immediate report after activity, and report one year following activity. The reports will include a summary section explicitly identifying what was learned and other results.</p>	<p>Project Team members come to consensus within the 6-month Project Team planning period, allowing for timely testing or implementation of policies or practices.</p> <p>Ministries continue to have staff and partners each year who are responsible for STEM education who also have a clear vision for their country's problems in STEM teacher education.</p>

NARRATIVE SUMMARY OF OBJECTIVES AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
	<p>specific STEM topics by an average of 20% following a face- to-face workshop held in July 2019. *Data disaggregated by gender.</p> <p>2.2 At least 80% Teacher Fellows state that they have increased their use of evidence- based actions that promote the inclusion of girls and women in STEM following the completion of a 2- year professional development plan. *Data disaggregated by gender.</p> <p>2.3 By the end of Phase 4, at least 66% of Teacher Fellows demonstrated improvements in gender-equitable instructional practices and leadership (by May 2021). *Data disaggregated by gender.</p> <p>2.4 Teacher Fellows increased their self-efficacy as STEM teachers and as STEM instruction leaders (who can provide support to their colleagues) by an average of 0.5 points on a 5- point Likert scale following the completion of a 2- year professional development plan. *Data disaggregated by gender.</p> <p>3.1 At least 5,000 educational leaders who registered for ITEN- promoted professional develop reported that they learned about the opportunities through local or national education agencies (at least 3,000 by Dec 2020,</p>	<p>2. 1 Synthesis of pre- and post- test responses to Light and Optics Concept Exam (LOCE): The LOCE is a survey on basic geometric optics that is a core aspect of physics. Results from 11 UNESCO- sponsored workshops around the globe show an average 37% increase using the Hake-gain score analysis (percent increase over what was already known).</p> <p>2.2 Synthesis of pre- and recurring post-test responses to the Science Teaching Practices Self-Assessment (STPSA): Part 1: Active Learning in Science and Part 2: Everyday Actions to Promote Inclusion in STEM, supported by the Science Teaching Survey (STS): Part 2: Gender in Society and Science, supported by holistic classroom observation that affirms the inclusion of girls and women in active learning (both implicit and explicit).</p> <p>2.3 Summary analysis of Teacher Portfolios: Teacher portfolios will include the objective use of classroom observation tools (Reformed Teacher Observation Protocol for secondary teachers, and Community of Practice protocol or other appropriate tool</p>	

NARRATIVE SUMMARY OF OBJECTIVES AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
	<p>and at least 2,000 more by Dec 2021).</p> <p>3.2 By the end of Phase 4, at least 8 Seed Grant awardees explicitly include in their executed projects an ITEN-promoted professional development offering or otherwise ITEN-approved, evidence-based professional development offering that supports STEM teacher education.</p> <p>4.1 5 semiannual progress reports approved by DPE and donor (1 by June 2019; 1 by Dec 2019; 1 by June 2020; 1 by Dec 2020; 1 by June 2021). 1 final project report by the end of this project.</p> <p>4.2 80% of recommendations from the external evaluation incorporated by the end of the project.</p> <p>4.3 80% of recommendations from the verification reports incorporated by the end of the project.</p>	<p>for early childhood teachers), scores on the Science Teaching Practices Self-Assessment (STPSA), supported by teacher narrative reflections on their own scores of science content competence, gender-equitable everyday actions, science teaching self-efficacy, and instructional leadership self-efficacy on the Science Teaching Survey (STS).</p> <p>2.4 Synthesis of pre- and post- test responses to the Science Teaching Survey Part 1: Science Teaching Self-Efficacy, Part 3: Teacher Leadership Self-Efficacy, and Part 4: Science Teacher Leadership Activities.</p> <p>3.1 Summary of Activity Surveys showing that educational leaders learned about ITEN activities from their local or national educational agencies.</p> <p>3.2 Summary of results from Seed Grant portfolios: These portfolios will include the project work plans and reports one year following the activity. The reports will include a summary section explicitly identifying what professional development was offered and how many individuals were impacted.</p>	

NARRATIVE SUMMARY OF OBJECTIVES AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
		4.1 Progress and final reports  4.2 Progress and final reports  4.3 Progress and final reports	
<p>ACTIVITIES</p> <p>1.1 Form Project Teams from Ministries of Education with shared problems of policy or practice in STEM teacher education that work to develop and work toward goals and seek feedback through ITEN mechanisms.</p> <p>1.2 Execute three Seminars that include information-sharing and feedback among Project Teams and other Ministries of Education that feature good practices in STEM education policy and practice.</p> <p>1.3 Organize approximately ten Cooperation Exchanges among Ministries of Education to promote knowledge exchange and capacity building.</p> <p>1.4 Support the regular scheduling of virtual communication among Ministries to facilitate the</p>	<p>OUTPUTS 1 : 828,826.35            OUTPUTS 2 : 454,642.20            OUTPUTS 3 : 198,120.15            OUTPUTS 4 : 1,071,715.90</p>	<p>Project Financial statement</p>	<p>During the implementation of ITEN Phase 4, government transition will have minimal effect on Project Teams because the MOU will require a 6-month commitment.</p> <p>During the implementation of ITEN Phase 4, educational leaders have sufficient time and energy to allocate to the work of Project Teams.</p> <p>Within the first six months of the project each year, Ministries will directly identify or advertise the Teacher Fellowship and receive enough or more than a sufficient number of eligible and willing candidates that they can nominate by late spring</p> <p>At the start of the project, expectations for collaboration and communication will be clearly understood by participants, and participants who self-select into activities will have the skills and desire to collaborate despite potential obstacles.</p>

NARRATIVE SUMMARY OF OBJECTIVES AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>Project Teams and to feature the work of Ministries in publications.</p> <p>2.1 Build a cohort of 30 STEM Teacher Fellows nominated by their Ministries of Education.</p> <p>2.2 Provide a 2-year experience of online and face-to-face professional development in STEM that takes into consideration issues surrounding equitable participation of girls and women in STEM.</p> <p>2.3 Support community-based leadership activities of the Teacher Fellows.</p> <p>3.1 Host events that feature the work of Ministries of Education and that expose other Ministries to evidence-based professional development resources for STEM teachers available through ITEN.</p> <p>3.2 Award approximately ten Seed Grants among Ministries of Education to support the institutionalization of evidence-based professional development, including ITEN-</p>			<p>ITEN 2020 Annual Seminar is not delayed past May 2021 (the point at which the start of the third cycle of Project Teams) due to travel restrictions caused by COVID-19.</p> <p>The execution of Cooperation Exchanges and Seed Grants awarded in 2019 and 2020 are not delayed beyond May 2021 (the point at which the start of the third cycle of Project Teams) due to travel restrictions caused by COVID-19.</p> <p>Teacher Fellow classroom observations are not delayed beyond May 2021 (the end of the Teacher Fellowship) due to travel restrictions and school closures caused by COVID-19.</p>

NARRATIVE SUMMARY OF OBJECTIVES AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>sponsored STEM workshops and digital resources such as the Virtual Communities, Teacher Resource Center.</p> <p>3.3 Update the content of ITEN website and online resources in coordination with OAS Press and Communications to demonstrate coherence of purpose and a suggested professional development pathway for teachers.</p> <p>4. 1 Project Planning</p> <p>4.2 Project Monitoring</p> <p>4.3 Project Evaluation</p> <p>4.4 Dissemination</p>			

## Calendar of Activities

	MONTH																																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
1																																					
1.1		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1.2							x									x										x											
1.3								x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x
1.4		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2																																					
2.1							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x						
2.2				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x							
2.3							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x							
3																																					
3.1								x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x
3.2		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3.3		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4																																					
4.1		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
4.2		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
4.3		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
4.4						x	x	x				x	x	x				x	x	x				x	x	x					x	x	x			x	x

Date of presentation: **04-28-2020**

By: **RVIEYRA**