

ROBOTIX[®]
Fundación

Report
2021-2022



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Message from our CEO

The key challenge in 21st century education is to generate active, conscious and innovative teaching, where children and adolescents feel emotionally involved and motivated to learn and discover new things.

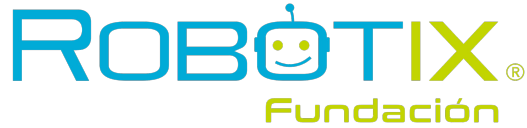
Now that the educational community has been forced to innovate due to COVID pandemic, the challenge has arisen of how to update to models with greater student participation and motivation. Instructing students to only memorize information does not address current needs; It is essential to train children capable of reflecting, questioning, experimenting and enjoying learning.

In this regard at RobotiX Group, we seek to promote programs that transform education and motivate students to be agents of change and participate in the construction of a better world through Play, Robotics and STEM.

The aim of this report is to show everything we achieved together with our allies and donors during the 2021-2022 school year. We are very grateful to each and everyone who has joined our cause!

Roberto Saint Martin | CEO





At **RobotiX Group** we are committed to transforming and promoting education through Play, Robotics and STEM, so that children and youth in Mexico and Latin America develop new skills, and obtain the necessary tools to have a better present and future.

RobotiX Group, is made up of two organizations: **RobotiX**, is the organization that began teaching robotics courses to mechatronic engineering students, and which later led to teaching robotics to girls and boys from private schools, and **RobotiX Foundation**, later emerged as a response to ensure that these opportunities reach public schools and community centers where budget was a major barrier.

Through **RobotiX Foundation**, we have focused on ensuring that low-income girls, boys and adolescents and vulnerable groups gain and maintain access to STEM educational programs, through alliances with socially responsible companies, governments and civil associations.

It is not about a lack of talent but a lack of opportunities.

16 years detonating change

2015

We work jointly with the Secretariat of Communications and Transport to implement the network Punto México Conectado nationwide.

2016

We released RobotiX in the Box an educational program that allowed Public Schools to incorporate Robotics and STEAM in their curriculum. PIPE-CIDE did a research through a pilot test in Mexico City to validate the impact of the program in Primary and Secondary schools.

2017-18

Our Programmes were selected by the Secretariat of Public Education at local and federal levels as part of the Official Curriculum Autonomy solutions. The Programmes were implemented in over 1,100 schools in Mexico City, Sonora and Campeche, and impacted over 160,000 students.

Promoting STEM

STEM has an applied and interdisciplinary approach that is coupled with problem-based learning.

The students who train in STEM are people who not only stand out for being innovators and critical thinkers, they are also students capable of making meaningful connections between the educational institution, the community, work and global problems.

In an increasingly globalized and complex world, where success lies not only in what is known, but in what can be done with that knowledge, today more than ever it is essential that young people have the knowledge and skills needed to solve complex problems, gather and evaluate evidence, and make sense of information.

There are great opportunity areas for new generations:

In the world there are more than 6 million of vacancies in STEM
(3 to 1 in STEM vs. 1 to 6 in Construction)



Science

Explore, know, experiment



Technology

Programming, innovate, Improve



Engineering

Build, test, iterate



Arts

Communicate, empathise, social change



Mathematics

Measure, calculate, optimize

Mexico is experiencing a relevant moment of economic development with *nearshoring*

We promote two programs nationwide:

1

STEM for all

- 1.1 *FIRST* LEGO League
- 1.2 RobotiX in the box
- 1.3 Learning Solar Lab

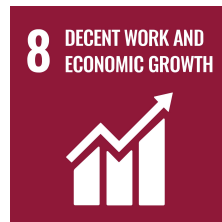
2

Playful Pedagogies

- 2.1 Learning through play
- 2.2 Pedagogy and Play

Aligned to:

SUSTAINABLE DEVELOPMENT GOALS



Program

STEM for all

Results 2021-2022



Through this strategy, we promote access to STEM programs for students ages 4 to 18 in public schools and community centers.

For all schools, RobotiX Foundation provided materials, training and strategic monitoring with teachers and their administrators.

We also host regional and national events to shape the culture around STEM promotion and interest.

The success of this strategy is not only related to helping schools transition to quality STEM activities and learning, but also to connecting those needs with local, state and federal public policy, private organizations, donors and a whole harmonious national educational system.

Each school receives:



Base equipment for a STEM classroom



School network monitoring



Educational material for the school year



School, regional and national fairs and events



Annual training for educational figures



We promote implementation and continuity through programs:



STEM for all

General scope



Presence in
31 states



604

educational institutions
participated in our
programs



81.45%

of the participating
institutions were
benefited



37,622

impacted
students



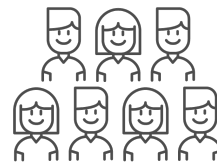
46.60%

of the impacted
students were
girls



5,767

equivalent in number of
teams



175,028

impacted students
indirectly



877

impacted
teachers

Scope breakdown of each programme

#	Program	Beneficiary educational institutions	Reached Educational institutions	Directly impacted students	Equivalent in number of teams	% of girls	Indirectly impacted students	Impacted teachers
1	FIRST LEGO League Challenge	165	229	3,654	457	48.44%	70,822	--
2	FIRST LEGO League Explore	190	232	7,826	1,565	49.22%	62,633	--
3	FIRST LEGO League Discover	105	111	5,507	1,376	50.06%	13,388	--
	Full scope of FLL in Mexico:	460	572	30,739	5,767	49.33%	146,843	833
4	RobotiX in the Box	30	30	5,381	--	39%	26,905	42
5	Solar Lab San Mateo Atenco	1	1	360	--	52%	200	1
6	Solar Lab Ecatepec	1	1	692	--	52%	1,080	1
	Full scope of STEAM for All:	492	604	37,622	5,767	46.60%	175,028	877



Growth in schools through years

	16-17	17-18	18-19	19-20	20-21	21-22
Benefited Schools and Learning Centers	22	103	181	322	400	462
Self-sufficient Schools and Learning Centers	--	--	81	141	66	112
Schools and Learning Centers sustained by public budget	765	828	181	70	34	30
Total of impacted Learning Centers	787	931	443	533	500	604



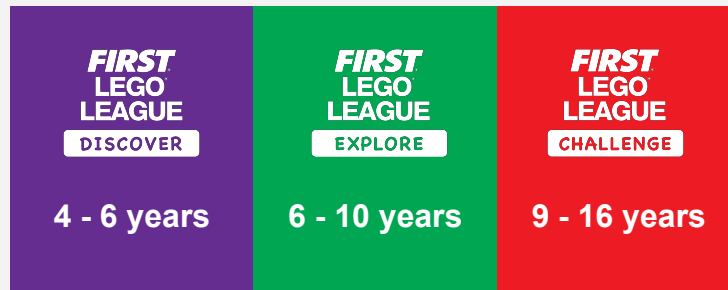
FIRST LEGO League introduces Science, Technology, Engineering, Art and Mathematics (STEAM) to students ages 4 to 16 through play, fun and hands-on learning. Participants acquire real problem-solving skills through guided programs that allow them to build a better future here and now.

Since the 2018-19 season, RobotiX Foundation was selected as an Operational Partner of the FIRST LEGO League for Mexico. Since the 2017-18 season, our foundation began to receive grants to implement FIRST LEGO League programs in different schools and community centers in different regions of Mexico.

During the 2021-2022 school year with **CARGO CONNECT Season**, we managed to increase the number of teams and schools in Mexico: **572 institutions** were part of the program. Therefore we achieve to impact **30,739 students**.

Out of 572 institutions, **80.41% were benefited** in collaboration with our donor network.

This program is divided into three categories:



Season 2021-2022

During season **CARGO CONNECT**, students learned how packages are transported, classified and delivered.



572

educational institutions
were part of the
program



80.41%

of the participating
institutions were
benefited



30,739

impacted
students



49.33%

of the impacted
students were girls



833

impacted
teachers

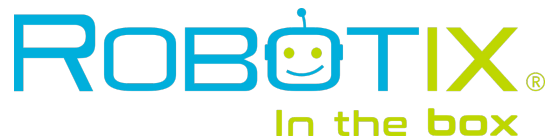


¡We held 12 virtual and on-site
in different regions!



8 teams were selected to represent Mexico in the
FIRST LEGO League international events that took
place in USA, Brazil and Australia.





Since the 2016-17 season, RobotiX Foundation began this program with a pilot with the Education Authority of Mexico City (AEFCM) with 15 primary and secondary schools. The program saw rapid growth in the number of schools implementing it as a result of the government's interest in scaling robotics and STEM in the public education system from 2017 to 2018, when a new federal administration office was inaugurated.

COVID was also a major disruptor of this program and the ability of public schools to prioritize robotics and STEM over math and other content in the context of the pandemic.

During the 2021-2022 school year, we managed to benefit **30 schools**, in collaboration with our donor network. Therefore, we achieved to impact **5,381 students (directly)** and **26,905 students (indirectly)**.

Impact during 2021-2022:



30
educational
institutions were
part of the program



5,381
impacted
students



42
impacted
teachers



Presence in
10 States

At the end of the school year, all schools that belong to RobotiX in the Box program, were invited to participate in **RobotiX FAIRE**, where they presented innovative projects.

RobotiX FAIRE is a coexistence STEM fair where technology, fun and learning combine to bring girls, boys and young people from all over the country experiences that allow them to develop skills for their present and future. During 2021-2022 school year, we selected the best 12 projects of 30 schools that were part of RobotiX in the box.



12

bests projects in the country



36

Participants



1st Place in 2022

Project “Ecosilla Arduino”

Technical Secondary School 17 | Mexico City

Using materials they already had, members of this team, create a project to help people with visual impairment so they could know how to located through sensors, engines and different items related with electronics and programming.

The project was implemented in their school.

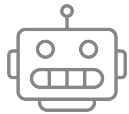
SOLARLAB

Solar Learning Lab

Since the 2018-19 season, RobotiX Foundation implemented this program in collaboration with Computer Aid (United Kingdom) and with DELL Mexico as the main donor, to implement and operate learning centers where students could benefit from robotics, IT and other programs. strategic.

A first Solar Lab was built in San Mateo Atenco, a community 15 minutes away from Toluca in the State of Mexico to benefit the marginalized population in 2018. During 2019, a second Solar Labo was built in Ecatepec, also in the State of Mexico.

After the pandemic, labs reopen gradually and during the 2021-2022 school year different activities were provided to the community.



Robotics and computing



Support to users in online personal procedures



Workshops for teachers





Solar Lab San Mateo Atenco
Estado de México
Primary school "Benito Juárez"

Return to on-site activities in 2022



360
 students took
 one of the
 courses.



52%
 of the
 participants were
 girls.



Solar Lab Ecatepec
Estado de México
Secondary school "Profesor Roberto Ruiz Llanos"

Opening in May 2022



692
 students took
 one of the
 courses.



52%
 of the
 participants were
 girls-

STEM for all program was possible thanks to:

• APTIV •



The LEGO Foundation





“

Students shows great spirit and motivation to learn robotics. They are playing while solving a challenge.

Guadalupe García
School “Talentos Guanajuato Azteca”

“

Teamwork was very important for the students. They learned to socialize, share ideas, knowledge and opinions. Therefore, they build friendships. Also, different values were promoted and linked with socioemotional aspects.

Francisco J. Hernández
School “Juana Marfil Castro”

”

”

Program

Playful pedagogies

Results 2022-2023



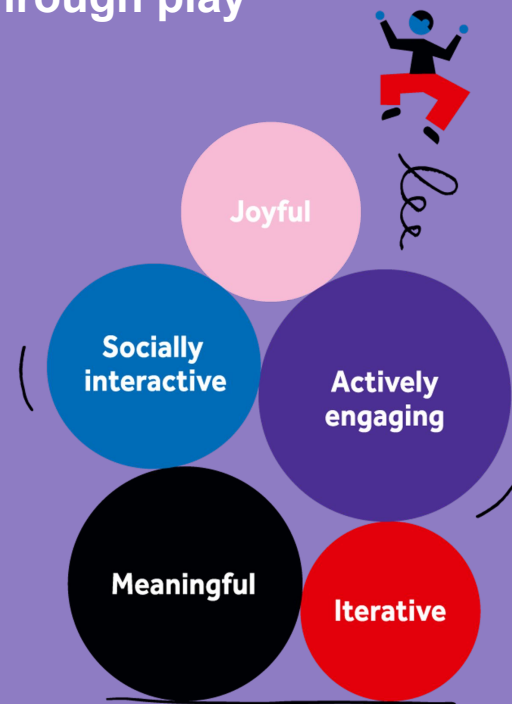
To advocate for the empowerment of children and young people, it is imperative to influence pedagogies and systemic change in the country. As a result of the RobotiX Foundation's trajectory and with the responsibilities and opportunities that come with working together with more than 30 municipalities and states in Mexico, we decided to be more active promoters of Playful Pedagogies from the 2020-21 school year.

In collaboration with LEGO Operations of Mexico and the LEGO Foundation we have implemented programs to promote Learning through Play and Project based Learning (PBL).

The LEGO Foundation



Experiences of learning through play



©The LEGO Foundation

APRENDE A TRAVÉS DEL JUEGO



As part of the campaign **Rebuild the World**, in 2022 we were invited by LEGO Operaciones de México to be part of an initiative to promote **Learning through Play**.

The goal of this campaign was to bring ludic and learning experiences to 10,000 children in Mexico to identify the importance of Play as a key aspect in children development.

We invited elementary students to participate in a session where they did ludic activities that helped stimulate their curiosity and motivate their learning process.

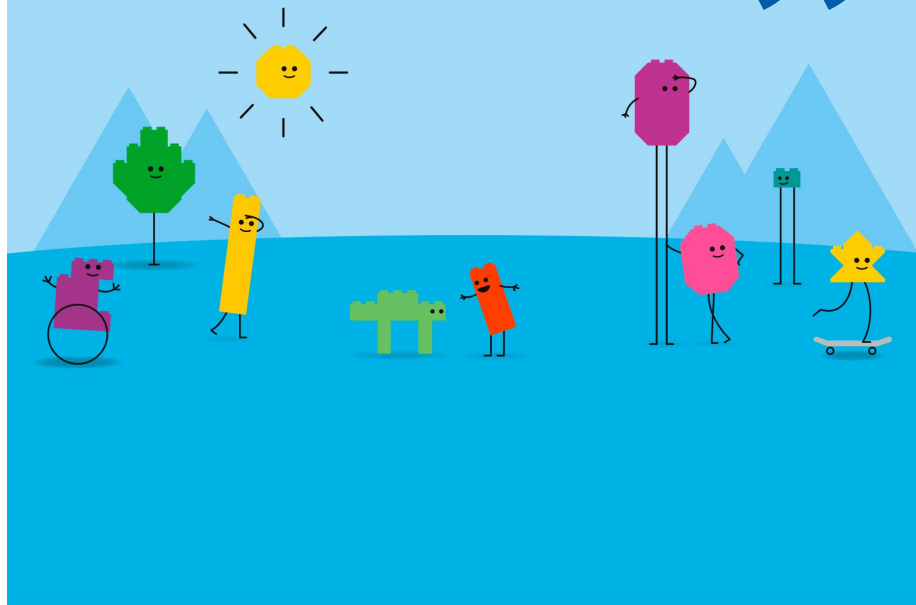
This workshop allowed participants to do different activities during which they gained knowledge in a ludic way.

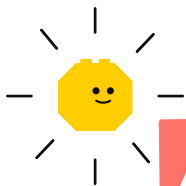
“

We are very grateful for having the opportunity to collaborate. We are enjoying the process, both teachers and students.

Guillermo Ramírez Berlín
Primary school | República de Suazilandia

”





APRENDE

A TRAVÉS DEL JUEGO



36

impacted
schools



12,140

Elementary level
participants



367

groups



60

impacted
teachers



49%

girls

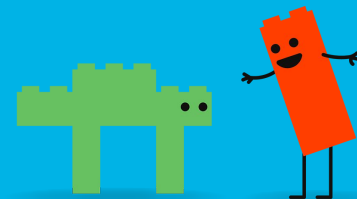


6

states

Workshops took place between March and September. The following results were obtained:

- 14 effective weeks of implementation
- Participation of 60 teachers
- Engagement with 4 Educational authorities from Zapopan, Guadalajara, Guanajuato and Yucatán.
- Implementation in independent schools from Veracruz, Mexico City and Mexico State



In 2021, the LEGO Mexico Foundation developed a workshop to promote “**Learning through play in preschool**” within public education. The workshop had an excellent reception from the teachers, prompting the LEGO Foundation to plan its continuation.

After the success generated, the LEGO Mexico Foundation invited the RobotiX Foundation to be the creator of a new workshop and be part of the Pedagogy and Play collection: Workshops to strengthen professional teaching practice.

The collection is made up of four workshops developed by different organizations:



The aim of the “**Project Based Learning through Play**” workshop is to present the basic principles of the Project Based Learning (PBL) methodology to enrich life in the classroom through the development of autonomy, co-responsibility, inclusion and play. This workshop will serve to strengthen teaching practice, promote motivation and creativity of students and generate impact in the educational field.

What does the workshop include?



Duration: 20 hours of theoretical-practical content



Materials: Videos, Learning Guide, Resources with activities and Microsite



Profiles targeted: Preschool and primary school teachers, preschool and primary school directors and supervisors.



Modality: Virtual and self-managed



Free: Accessible and free workshops for the educational community..

Main activities conducted during 2021-2022 school year:

- An investigation about mexican educational context and the scopes of the Project based Learning methodology worldwide.
- We attended an international event of PBL World.
- We design the extensive syllabus of the workshop and we developed contents and bibliography.
- We worked with a Film producer to design the scripts for the workshop videos.
- Seven videos for the workshop were recorded with total duration of 190 minutes.
- We collaborated with a Publishing house to design the Learning Guide.

¡Workshop Collection will be launched on June 2023!



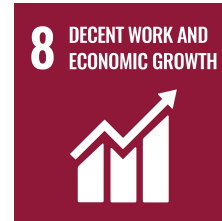
We worked with two focal points:

a Gender equality

b Inclusion and Diversity

Aligned to:

SUSTAINABLE DEVELOPMENT GOALS



Focal point

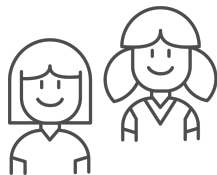
Gender equality

Results 2022-2023



Aligned with UN Sustainable Development Goal #5, one of our main actions is to promote more and more girls and women teachers to be part of our programs.

Through different strategies, we have achieved that **46.60%** of our total beneficiaries during the 2021-2022 cycle are girls, this has largely been due to the implementation of the programs in a curricular manner.



46.60%
as girls were part
of our programs



Additionally, within the RobotiX Foundation we promote:

- Leadership of girls and women in STEAM
- Use of non-sexist language, behaviors, attitudes, orientations and vocations
- In a creative and constant way, the approach of STEAM to girls, boys and teachers alike.



Focal point

Inclusion & diversity

Results 2022-2023



Within the benefited schools during the 2021-2022 school year, **1,185 students** with a disability or special learning condition participated.

278	learning disorder
201	visual disability
278	intellectual disability
89	hearing impairment
45	motor disability

“

For students whose mothers do not read and write, it was very nurturing to demonstrate their abilities regarding linguistics, art and location. This program allows the students to create transports and creative elements out of their imagination that can be hard to reflect in a notebook.

Yesenia Fernández | Ya paha de ya Batsi Preschool

”



Within the benefited schools during the 2021-2022 cycle, we had the participation of 1,394 students from an indigenous community.



FIRST LEGO League program were taught in **Tarahumara, Maya, Tu'un Savi (Mixte), Tsozil and Náhuatl**



“

In our indigenous community, FIRST LEGO League program meant an improvement in connection with collaborative work and how we use technology everyday.. We also learned to cooperate and respect each other.

A. Teresa Jiménez
Amextra La Paz

”

Program

Volunteering & mentoring

Results 2022-2023



At RobotiX Foundation, we want to generate a close link between the donor companies and the schools impacted by our programs. Throughout the school year, we carry out different events where we invite employees to participate as volunteers.

Among the activities they carry out are:

1. Participation as project evaluators or judges
2. Team mentoring

Through this activities, students obtain feedback of their projects and tips to improve their presentations, as well as effective communication strategies.

In addition, through these efforts, children are motivated and inspired by experts in STEM.



60

Volunteers were
Team mentors



361

Volunteers were part of
our events



Financial statements

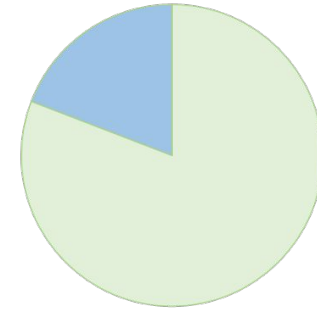
Results 2022-2023



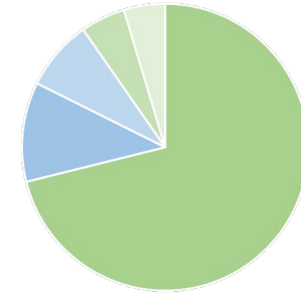
Received donation for each project

*Figures in local currency

STEM for all	\$ 17,968,046	81%
<i>FIRST LEGO League</i>	\$ 15,811,135	71%
<i>Learning Solar Lab</i>	\$ 1,120,343	5%
<i>RobotiX in the Box</i>	\$ 1,036,568	5%
Playful Pedagogies	\$ 4,260,507	19%
<i>Learning through Play</i>	\$ 2,493,695	11%
<i>Project based Learning</i>	\$ 1,766,812	8%
Total donations	\$ 22,228,553	100%



STEM for all Playful Pedagogies

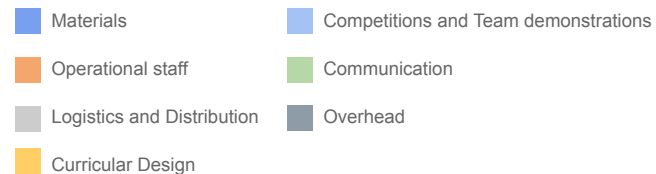
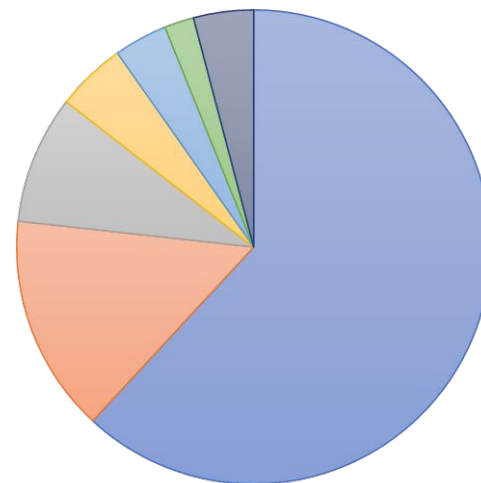


FIRST LEGO League Learning through Play
Solar Learning Lab Project based Learning
RobotiX in the box

Outgoings

*Figures in local currency

Concept	Amount	%
<i>Materials</i>	\$ 13,285,151	62%
<i>Operational staff</i>	\$ 3,188,163	15%
<i>Logistics and Distribution</i>	\$ 1,878,931	9%
<i>Curricular Design</i>	\$ 1,020,698	5%
<i>Competitions and Team demonstrations</i>	\$ 782,935	4%
<i>Communication</i>	\$ 431,537	2%
<i>Overhead</i>	\$ 879,021	4%
Total outgoings	\$ 21,466,436	100%



General results

**Figures in local currency*

Project	Donations	Outgoings	Remaining balance	%
STEM for all	\$ 17,968,046	\$ 17,626,563	\$ 341,483	2%
<i>FIRST LEGO League</i>	\$ 15,811,135	\$ 15,599,805	\$ 211,330	1%
<i>RobotiX in the Box</i>	\$ 1,036,568	\$ 1,006,903	\$ 29,665	3%
<i>Learning Solar Lab</i>	\$ 1,120,343	\$ 1,019,855	\$ 100,487	9%
Playful Pedagogies Promotion	\$ 4,260,507	\$ 3,839,872	\$ 420,634	10%
<i>Learning through Play</i>	\$ 2,493,695	\$ 2,073,061	\$ 420,634	17%
<i>Project Based Learning</i>	\$ 1,766,812	\$ 1,766,812	\$ -	0%
Total	\$ 22,228,553	\$ 21,466,436	\$ 762,117	3%

Remaining balance of 21-22 school year will be used to continue with the programs during the next school year.

More about in:

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; Thank you!