

STEM FOR GIRLS

REPORT - 2019-2021



ABOUT ORGANISATIONS:

Digital Empowerment foundation:

DEF is one of the leading practitioners in the field of Information & Communication Technology for Development (ICT4D). Through all its diverse programmes, projects and activities, DEF seeks to help people living in information darkness overcome the information barrier, learn how to use digital tools and the Internet to achieve greater socio-economic equality by uplifting themselves almost on their own using the power of digital devices to access information and knowledge. It has been more than 15 years since DEF took an oath to work with the poorest of the poor in rural India to fight information poverty. A lot of its beliefs and efforts have turned into national movements. DEF is glad that what it envisioned a decade and a half ago is replicated in the government's vision, a vindication of the ethos that the organisation holds. "Digital empowerment" is a phrase that is extensively used in the national agenda because the Internet is an empowering tool. It has the power to bring in equality, equity, transparency and accountability. It can create a world where the powerless and the powerful enjoy equal opportunities to be online and equal chances to access information. And STEM for Girls (SFG) is the project which perfectly suits the purpose to enable and empower with equal opportunity and accessibility.

Through, STEM for Girls Project, Digital Empowerment Foundation has been working in various government schools of Telangana and Assam. In Telangana, with focus to built capacity of Girls with new Lifeskills, Career guidance, Gender sensitisation, Digital Literacy and Coding Skills among 9200 adolescent girls of select Government Girls Senior Secondary Schools (GGSSS) of academic year 2019-2020, covered up to 19221 students (both girls and boys) in year 2 i.e., 2020-2021.

Whereas in Assam, the project was implemented in 4 select districts covering 5000 girls pursuing their educational qualification from government schools in the academic year 2019- 2020, benefitted overall 7256 students including boys in year 2 i.e., 2020-21.

Telangana

Year	2019-20	2020-21
Schools	58	90
Total no. of beneficiaries	9200	19221
No. of facilitators	24	35
No. of districts	21	22



PROGRAMME OVERVIEW

'STEM for Girls' is an initiative of IBM, supported by QUEST Alliance and DEF is the implementing agency. Both worked together to implement a school-based program which consists of life skills, career, gender, digital literacy and coding skills to encourage secondary school girls to pursue STEM careers. Based on the partner's requirement they could contribute relevant domain specific training & content to the overall program design and also focus on life skills, career guidance, digital literacy and coding skills, especially to girl students.

Objectives of STEM Project:

The core objective was to end information poverty and empower marginalised communities in information dark regions by bringing a digital revolution.

The objectives of this project were,

To encourage girl students to pursue STEM career and develop a scientific and rational approach.

- To introduce Computer programming, and digital literacy.
- To teach girls the use of STEM in their day-to-day life.
- To conduct sessions on Career and Life skills.
- To educate about Gender roles, the stereotypes associated with it and Eradicate Gender Stereotype.
- Improve the Soft Skills
- Coding on SCRATCH

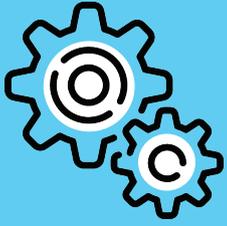
MAJOR HIGHLIGHTS OF YEAR 1

KPMG Baseline Assessment Survey:

KPMG Baseline Assessment Survey is like a pilot survey to implement STEM for Girls project in the schools. Its main theme is what is the status of schools before implementing the STEM for Girls project and What is the Status of school's end of the STEM for Girls project.

KPMG Baseline Assessment Survey Focus on:

- ▶ Interaction with Head Master/ Principal
- ▶ Interaction With Teachers
- ▶ Interaction with Student (8th-,9th & 10th)
- ▶ School infrastructure Survey
- ▶ Interaction with Parents
- ▶ Appointment with MEO & DEO

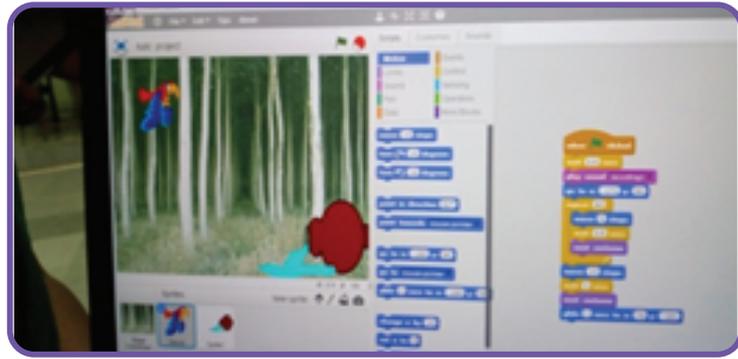
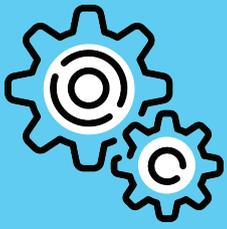


TRAINING ON MONITORING AND EVALUATION:

Telangana & Assam

During Monitoring & Evaluation orientation, 24 facilitators from Telangana and 22 facilitators from Assam of Digital Empowerment Foundation were attended the programme. They were trained by Quest Alliance M&E team on STEM project to fill various forms on Kobo collect app and others forms for monitoring & evaluation.







DISCUSSION ON VARIOUS FORMS:

1. Facilitators Feedback form

Facilitators had to send the form after complete the Training

2. Facilitators Quarterly Feedback form

Facilitators had to send the form every three months regarding curriculum, challenges, events...etc.

3. Feedback on M&E Orientation

Facilitators had to send Feedback about M&E Training through this form

4. School Registration Form

Facilitators had to send School registration form after joining

5. Target Setting Form

Concern organization set the target to reach the goal for every three months.

6. School Intervention Reporting

Facilitators had to send the form after every session in the school.

7. Event completion form

Facilitators had to send the form after complete of every event in the school as teacher induction programme, parents meeting and any project work on SCRATCH.

8. Growth chart Template

Facilitators had to send the form after complete Module –ii, ii & IV in the curriculum.

9. School Infrastructure form

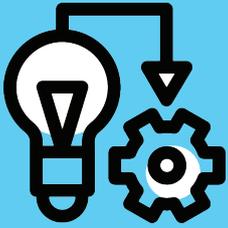
Facilitators had to send the school infrastructure form after joining the school.

10. Student enrolment Form

Facilitators had to collect the data from every student and send it.

11. Attendance Sheet

Facilitators had to take attendance of student and send it.



SCHOOL IMPLEMENTATION:



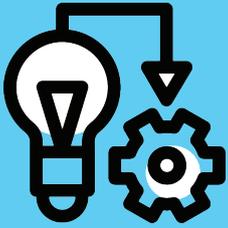
During the school visit, we interacted with students to have an understanding whether they are interested/ eager to learn computer and aligned subjects. After completing their training, facilitators visited their respective schools to build rapport and collect necessary data. We started our intervention by conducting teacher induction by Facilitators in their respective schools. The facilitators conducted Pre-test to assess the current level of knowledge among students which gave us an idea of improvement by the end of the project.



Interaction with HMs and Teachers

District and Block officials Engagements

DEF team met the district officials (Inspector of Schools, DEO and Sr. Accountant RMSA) across districts (on 16th November, and 19th November, 21st November, 22nd November, of Nagaon, Kamrup (rural), Morigaon and Barpeta respectively) in Assam and very briefly shared about the project and its expected outcomes. We have requested the IS office to call for a meeting with HMs of the selected schools in their respective district. RMSA official in consultation with IS has given us tentative dates for the orientation meeting. On 18th November and 28th November, we conducted HM orientation sessions in Nagaon and Barpeta respectively, in the presence of IS, Nagaon and RMSA official. For the meeting, we prepared a PowerPoint presentation and vividly shared why we are implementing this project.



In Telangana KPMG survey Schedule: From 4th November 2019 to 6th November 2019.



Group Picture during the Survey



In year 2 during when pandemic emerge, we had a meeting with Mr. Ravikanth (DEO, Siddepet). DEO already had a great idea about SFG project and he was very impressed with all the work doing by the DEF team.

Keeping in mind that it's a pandemic and all the upcoming sessions to be conducted in virtual mode we had a discussion on the strategy plans how to implement virtually.

So, DEF team came up with an approach plan and given a clear view on it. DEO appreciated the effort and was very satisfied with those action plans. And we requested to instruct all the HM's and teachers about the actions plans to cooperate for STEM for Girls virtual mode actions.

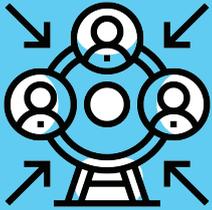


For year 2 most of the SFG curriculum to the students was delivered virtually because of covid-19. All the teachers, HM's and RCO's cooperated very well to implement SFG curriculum virtually to the students. As a part of year 2 discussion, we had first official meeting with Dr. Sharada Venkatesh (RCO, Hyderabad and Rangareddy region) on 2nd Feb 2021.

In the interaction, RCO madam expressed all good insights and positive outcomes which she noticed from their students after the STEM classes. She also expressed that this type of skills is more equally required for the students to get the awareness about their career paths and 21st century skills to survive in this modern world.

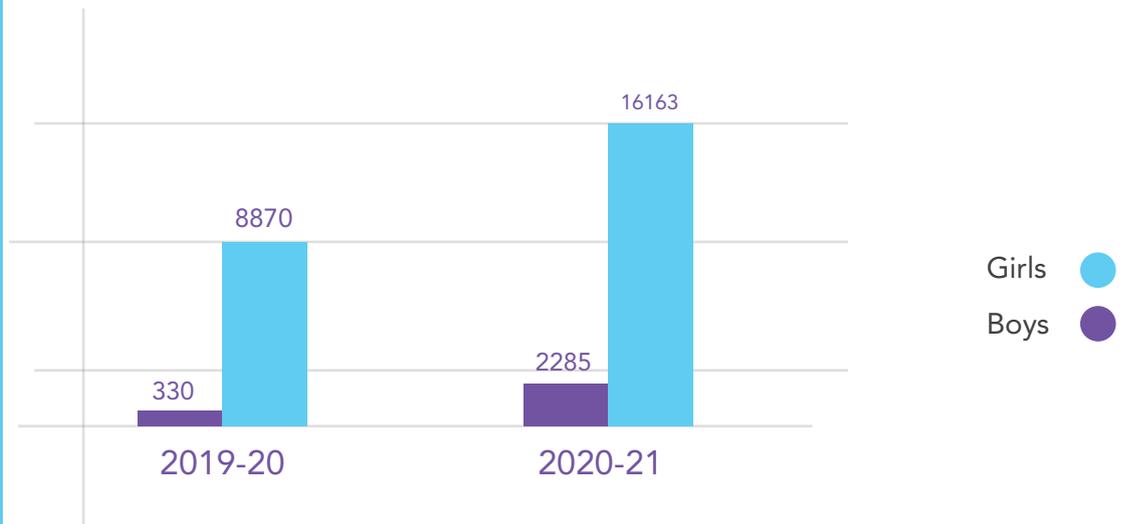
She said that she was personally monitored some of the student mindsets after the STEM classes and get surprised. Students built a perfect mindset through STEM classes which was very important madam expressed.

Madam also said that Students now are able to discover career planning techniques that build on their unique strengths, interests-and-abilities. And also, Students will develop communication skills and knowledge to negotiate conflict in a range of specific situations more effectively through STEM for Girls.



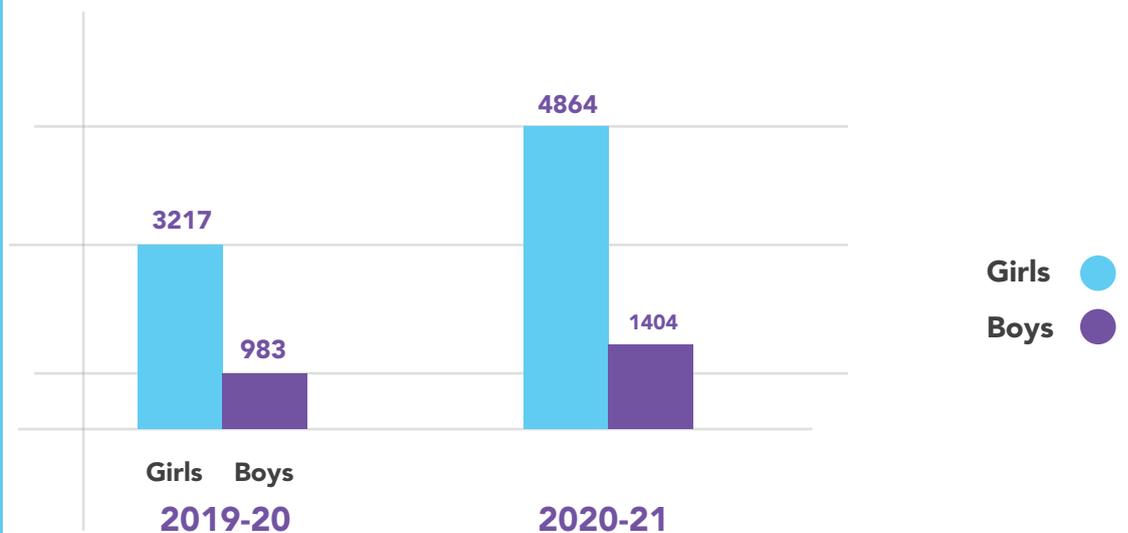
STUDENT ENGAGEMENT

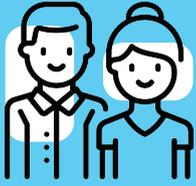
Despite all challenges, we successfully reached 18448 students in 90 govt. schools all across the 22 districts of Telangana and developed digital literacy skills on STEM education in the duration of 2 years from 2019-2021



Student reachout chart

Whereas in Assam we had reached 4200 students out of 5000 in 2019-20 and in 2020-21 we had reached 6305 students out of 7256 in all 63 government schools across the 4 districts of Assam i.e., Nagaon, Moregaon, Barpeta and Kamrup Rural and implement the STEM education.





PARENTS ENGAGEMENT



Parents play a vital role in the development of the children. Educating the parents means educating a child. Parent involvement in children's education and school has shown to have a positive impact on growth of a child.

Involvement of parents makes the child to feel motivated and improves their attitude & self-esteem. During the first year of the project the facilitators have conducted parent engagement twice for each quarter, but this year facilitators are able to conduct parent engagement frequently.

So, facilitators have taken an initiative to engage with the parents virtually and also by making calls. By virtual engagement parents have attended the Webinars like –

Gender awareness campaign-

After participating in gender awareness campaign many parents realized that girls are not lesser than the boys and they should also get equal opportunity.



Career webinars: -

After participating in career webinars most of the parents get to know about different careers and also about their child's dream.

And they get to know that there are many opportunities to reach the goal. Parents got some knowledge about the different career options.

Learning Day: -

Learning day is a day where the work of students is displayed. Parents also participated in learning day. Parents felt very happy on seeing the work done by the students.

Nirmaan webinar:

By attending in Nirmaan webinars parents get to know about different examinations, scholarship & higher education details.

After attending Nirmaan webinars parents with low-income background have got clarity that their child can get higher education with the existing opportunities. Parents also solved many doubts regarding their child's career.

RMI (Role model interaction): -

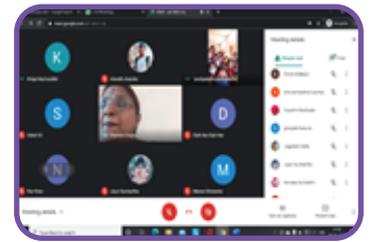
Every month RMI has been conducted, most of the parents show interest for attending RMI's. Most of the parents think that RMI is most helpful for them and also for their children. RMI session also motivates and helps the parents to encourage their children.





International women's day webinar: -

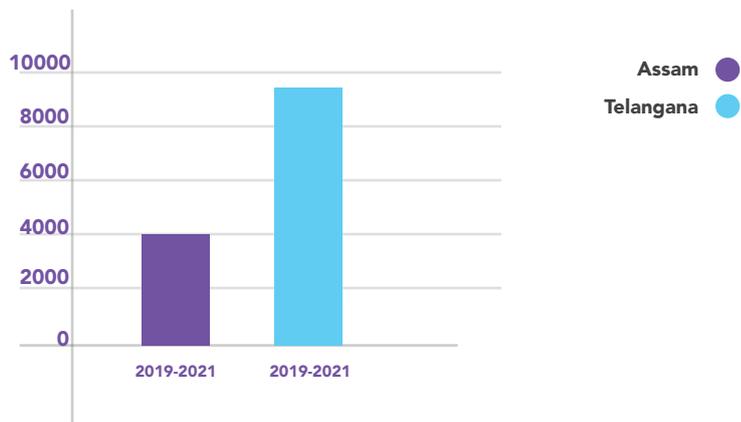
By the international women's day parents interacted with the Sharda Venkatesh (RCO), Jayashree Pathak, Anuradha Devi. By conducting webinars with the well-known females with the parents get inspired from them. On seeing the female personality from very poor families achieving their goals most of the parents also got confident on their children that they can also achieve higher positions in their life.



Wellbeing sessions: -

From the wellbeing sessions parents are so graceful that they get the emotional support for them and their children. After our wellbeing sessions parents feel very happy and are filled with the positive energy.

This in turn helps the parents to listen their children's good and bad time stories. Hopes the engagement of parents will continue for the next year...

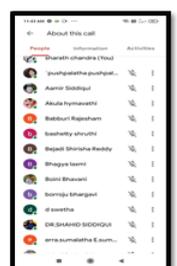
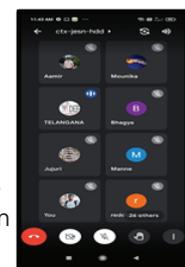


Parents Engagement

The info chart explains the number of parents we approached during parent's interaction session under STEM for girls project. In Assam we reached 4100 parents whereas in Telangana we interacted approximately 10000 parents in 2019-2021.

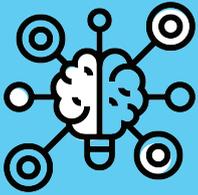
Weekly catch-up calls with team:

Every week the catch-up call with the team of Assam and Telangana has been conducted which is addressed by the program manager to discuss the weekly achievements, challenges, team performance, and plans for the next week. The team members share the weekly work status, challenges they faced during the week, and thoughts on it. The program manager gives his feedback and suggestions on it. With the help of catch-up call all the team to communicate with each other and build a good relationship among the team.



The catch-up call gives the space to the team members to express their point of view easily and with this, the team generate new ideas for better implementation of work which motivate the team members and build bonding among team.





INNOVATIONS AND OUTREACH

YUVA RADIO

About Yuva Radio

Yuva Radio an initiative of DEF, to make changes in the remote of the remotest part of society irrespective of their language and culture across the world. As we have seen how the poor students couldn't afford a mobile phone to attend classes. So, we decided to have a radio class which can enable community to engage in class with just a single smartphone anytime as per schedule. This initiative not only increases outreach but also create a flexible opportunity to access live classes. Yuva Radio is available worldwide and literacy is one of its program pillars.

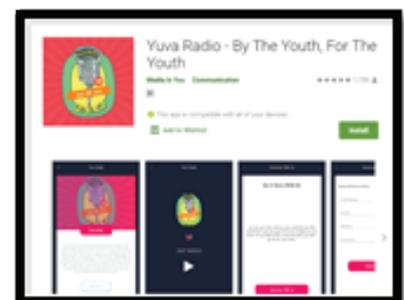
Yuva Radio in STEM for Girls Project

Yuva Radio played a pivotal role in the STEM project that changes the method of teaching and take it to another level. With the help of Yuva Radio, we delivered our classroom sessions through radio classes that mean the sessions which our facilitators give to the student in the classroom or through Whatsapp/phone call/IVRS is now enabling students to conduct classes on Radio also by the record it and run on the radio. Through radio classes we can reach to those students who are not able to attend sessions due to low internet/signal strength, not having a smartphone or any other and make them able to attend the sessions. In a group of 40 students' class if one student has this radio app the other can also listen to the session, through this no student has left without taking session. The session that runs on the radio parallelly updates regularly according to the classroom session. This radio app benefited both students and parents by engaging them and facilitate to empower them to bring the change in their life.

Yuva Radio app is available at Google play store and App store

Students' engagement

- Facts or Myths
- Gender Stereotypes session 1
- Gender Stereotypes session 2
- Men and Women are equal
- My Changing Body and Mind
- Scholarships information through Radio



Engagement through Yuva Radio App

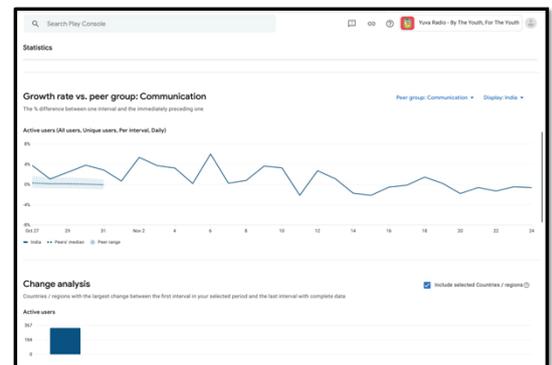
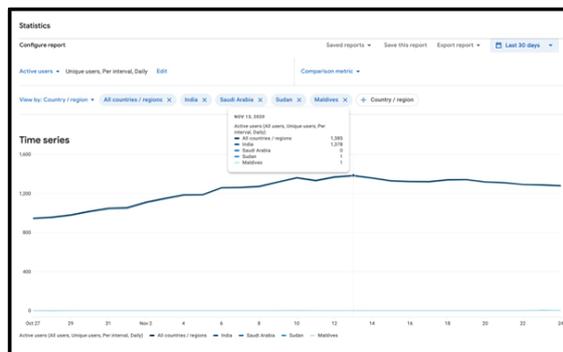
	Telengana	Assam
No of students	1953	380
Others	535	

Feedback:

My self B.yashashwini from 8th class, I downloaded the yuva radio app and started listening the classes, I am feeling very much excited by listening the classes, feeling like direct engagement by listening our facilitators voices, it was the new experience and very useful for us because in WhatsApp sessions sometimes we skip or unable to listen for some reasons but by this we have an access to listen at any time in whole week. My parents are also feeling very happy for this type of classes because we are learning our subject by listening only not keeping stress on our eyes for at least sometime in these virtual education time.

Myself Madhura Geeta. I am studying 10th standard at TSWRS Navipet from Nizamabad district. I have started listening to the radio classes which are very interesting and the frequency was very good. I am very much satisfied with the classes and the class timings. These class timings are very flexible to listen throughout the day even if I miss at one time I could catch up the class in the next mentioned time. The sessions from Yuva radio app are very interesting and easy to understand and the explanation is very good with examples. I had the opportunity to listen the session multiple times and I have prepared notes by listening to the Yuva radio sessions.

Analytics of Yuva Radio App: -

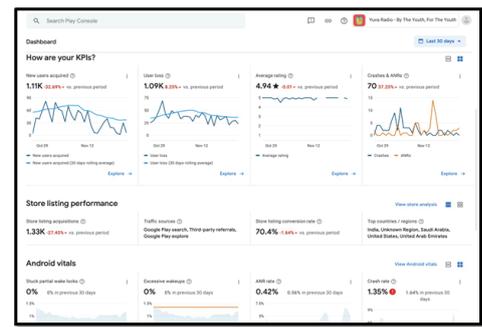
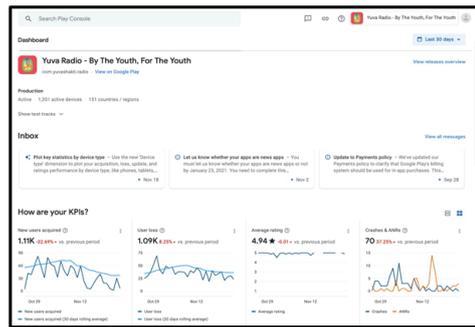


Date	All countries - regions	India	South Asia	Global	Median
Nov 12, 2020	5,364	5,288	-	5,181	0.0%
Nov 13, 2020	5,364	5,288	-	5,181	0.0%
Nov 14, 2020	5,364	5,288	-	5,181	0.0%
Nov 15, 2020	5,364	5,288	-	5,181	0.0%
Nov 16, 2020	5,364	5,288	-	5,181	0.0%
Nov 17, 2020	5,364	5,288	-	5,181	0.0%
Nov 18, 2020	5,364	5,288	-	5,181	0.0%
Nov 19, 2020	5,364	5,288	-	5,181	0.0%
Nov 20, 2020	5,364	5,288	-	5,181	0.0%
Nov 21, 2020	5,364	5,288	-	5,181	0.0%
Nov 22, 2020	5,364	5,288	-	5,181	0.0%
Nov 23, 2020	5,364	5,288	-	5,181	0.0%
Nov 24, 2020	5,364	5,288	-	5,181	0.0%
Nov 25, 2020	5,364	5,288	-	5,181	0.0%
Nov 26, 2020	5,364	5,288	-	5,181	0.0%
Nov 27, 2020	5,364	5,288	-	5,181	0.0%
Nov 28, 2020	5,364	5,288	-	5,181	0.0%
Nov 29, 2020	5,364	5,288	-	5,181	0.0%
Nov 30, 2020	5,364	5,288	-	5,181	0.0%

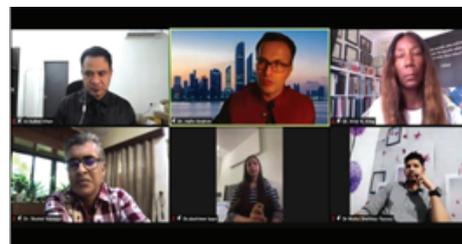
Date	All countries - regions	India	South Asia	Global	Median
Nov 13, 2020	5,370	5,293	-	5,185	0.0%
Nov 14, 2020	5,370	5,293	-	5,185	0.0%
Nov 15, 2020	5,370	5,293	-	5,185	0.0%
Nov 16, 2020	5,370	5,293	-	5,185	0.0%
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Nov 26, 2020	5,370	5,293	-	5,185	0.0%
Nov 27, 2020	5,370	5,293	-	5,185	0.0%
Nov 28, 2020	5,370	5,293	-	5,185	0.0%
Nov 29, 2020	5,370	5,293	-	5,185	0.0%
Nov 30, 2020	5,370	5,293	-	5,185	0.0%

Date	All countries - regions	India	South Asia	Global	Median
Nov 1, 2020	5,368	5,287	-	5,181	0.0%
Nov 2, 2020	5,368	5,287	-	5,181	0.0%
Nov 3, 2020	5,368	5,287	-	5,181	0.0%
Nov 4, 2020	5,368	5,287	-	5,181	0.0%
Nov 5, 2020	5,368	5,287	-	5,181	0.0%
Nov 6, 2020	5,368	5,287	-	5,181	0.0%
Nov 7, 2020	5,368	5,287	-	5,181	0.0%
Nov 8, 2020	5,368	5,287	-	5,181	0.0%
Nov 9, 2020	5,368	5,287	-	5,181	0.0%
Nov 10, 2020	5,368	5,287	-	5,181	0.0%
Nov 11, 2020	5,368	5,287	-	5,181	0.0%
Nov 12, 2020	5,368	5,287	-	5,181	0.0%
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Oct 21, 2020	543	541	-	511	0.0%
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Oct 27, 2020	543	541	-	511	0.0%
Oct 28, 2020	543	541	-	511	0.0%
Oct 29, 2020	543	541	-	511	0.0%
Oct 30, 2020	543	541	-	511	0.0%
Oct 31, 2020	543	541	-	511	0.0%
Nov 1, 2020	543	541	-	511	0.0%
Nov 2, 2020	543	541	-	511	0.0%
Nov 3, 2020	543	541	-	511	0.0%
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Nov 30, 2020	543	541	-	511	0.0%



Doctors Without Borders



During lockdown period DEF initiated a series of 'Doctors Without Borders' under STEM for Girls project where a group of doctors and public health experts had been approached for live discussion and consultation with the project beneficiaries such as families, relatives, friends and neighbour to provide them information regarding on Covid treatment and clear their doubts on it as it was harder for village patients to access treatment as the second wave pushed India's coronavirus cases at it's peak.



TESTIMONIALS

Life Changing Experience:



"I'm Ahmed Afreen, working as a facilitator in Tswrs Atmakur, Duggondi, Parvathagiri from DEF organization. This is my second experience first I worked as a teacher now here I worked as a facilitator. It was excellent experience for me to teach rural adolescent girls and teachers under SFG project. In this the students get knowledge out of their boundaries. Like, about their self who they are, what they want become what their interest and ability and how would be their communication with a group of people, what career choices they have and how gender equality will influence on their career dreams etc.

Not only the students even I learned and practice life skills and the mind set of adolescents. Mostly when I am engaged students towards their career spontaneously, I recognize what my career and I planned for that. As a part of this project, I participate many roles like CRP and Task force when I work with master trainers then I learned how to plan a session perfectly and how much time should give each topic of the session. Now I can able to plan and take a master session for heart to DEF organization for introducing such a wonderful project and make me as a part."



"I am Manne Shireesha, working as a project facilitator in Digital Empowerment foundation organization (DEF) for "IBM STEM for Girls Project". I'm from Siddipet, Telangana. We are Implementing this project in Government Schools for 8th,9th and 10th Grade students. Mainly we are focusing the students on 21st century skills like Digital Literacy, Life skills, gender, career skills, computational thinking, Coding. Before introduced this STEM Project I observed the many students, they didn't speak in the classroom and they didn't interact with the students and teachers due to fear. After introduced the Project lot of changes in the students because we engaged the student's activity-based manner. So, students have overcome their fear. They improved their communication skills as well as collaborative skills. Now they become very confident. We trained the students on programming language i.e., Scratch programming. Students were created many projects and games by using this platform.

They knew digital Literacy skills also, how to use internet and how to be safe in online. Finally, I shared my experience with you about this project. I Am so be glad to be part of this project personally I enhanced my skills like capacity building, team work like collaborative skills. I learnt so many things like time management. I become self-motivated and also motivated many students to reach their career goals. I conducted career day in schools. Students exhibited their career cards and their Scratch projects. I got many appreciations from teachers and Hm's that was best experience. I attended workshops conducted by quest alliance. Now I'm also member of TASK force Team. Lastly, I will be very thankful to Digital Empowerment Foundation organization and quest alliance for this opportunity."



TESTIMONIALS



“Madhusmita, a facilitator discussed about the problem faced by the girl students during the time of lockdown, many of the parent have very narrow thinking and doesn't want their girl to use phone and do video classes because they think using phone is not meant for girls and if they will use the phone then other villagers will disgrace their daughter and that will be problem in later stages of their daughter's life. When Madhusmita got to know about such thinking of the villager she directly contacted the parent and tried to convince them for the online classes of the girl.”



SUCCESS STORIES OF STUDENTS:



Student Name: Geetumani Das

School Name: Jharo Bari Anchalik High School

Class: IX

Facilitator Name: Naba Sarma

NGO: Digital Empowerment Foundation

Brief

This is a case study of Geetumani Das, a student of Jharo Bari Anchalik High School, studying in class IX. Here, in this case study, we will get to know about her mental state before SFG, and how did her mental state change after 1 year of engaging with SFG.

Background

Geetumani is a good and brilliant student of her school, her father died at his young age and her mother raised her after suffering a lot.

Geetumani wants to pursue higher education in science stream and become a professor.

Geetumani's family is an economically challenged family. Lately, she was not able to give concentrate in her class as usual.

What was the reason for that?

I observed and came to know that her mother could not afford to her further education. Their mental state became very bad. Then I explained the Geetumani and her mother together. I tried to bring the STEM mentality of those people and gave courage to fight against the circumstances.

Evaluation

After meeting her mother, I came to know that she is an educated women and she wanted Geetumani to help her family along with her in order to survive. This was the prime reason of taking the decision to stop Geetumani's education. I have provided her every information of the objectives of the project STEM for Girls and made her believe that after a few years of struggle and sacrifices, Geetumani can take up the responsibility of her whole family once she achieves her goal.



SUCCESS STORIES OF STUDENTS:

Impact

Geetumani and her mother were motivated to their core and now Geetumani is able concentrating in her classes more and proving herself academically strong.

Conclusion

Geetumani;s mother promised to support her in every way possible and give her everything that is required for the achievement of her goal.



Improvements through STEM

Students name: Khadija Khatun

School name: Baidyanath Sarma Girls High School

Class: IX

Facilitator name: Pinaki Barman

NGO : Digital Empowerment Foundation

Brief

This is a case study of Khadija Khatun, a student of Baidyanath Sarma Girls High School, studying in Class – IX.

Here, we will get to know how STEM curriculum helped Khadija to overcome the fear of studying science and math.

Background

Khadija is a good student but she lacked confidence in subjects like science and maths.

She found it difficult to concentrate in those subjects and thought these subjects were not that necessary.

Evaluation

I have figured out to provide STEM curriculum in full swing especially to Khadija and students like her.

It was necessary to bring out the fear of those subjects from her mind and make her aware that these subjects are necessary and provides a great impact on career selection.

Impact

As she was shy and very introvert, ice breaking session was conducted extensively.

Outdoor activities as well as extra curriculum activities were conducted.

Regular and smooth communication was established.

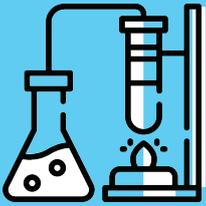
She opened up herself and now she is focusing on those subjects in a very effective manner.

She found a change in herself as well.

She is now able to communicate better and express herself.

Conclusion

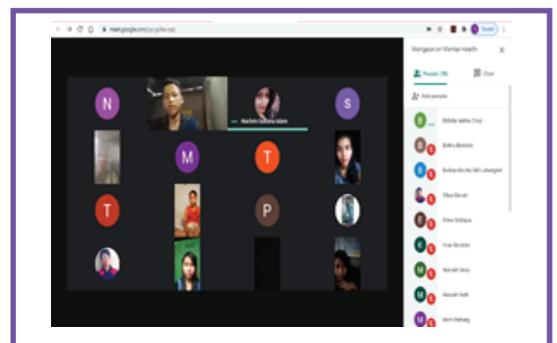
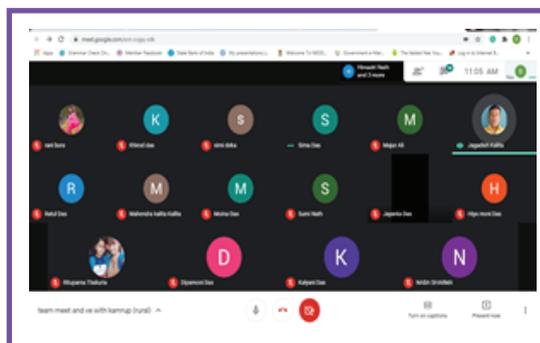
Next, I will try my best to find out and help girls like Khadija and provide them will full STEM mind-set.



SCIENCE EXPERIMENT DONE BY THE STUDENTS



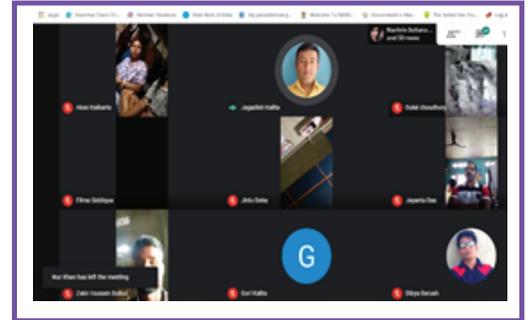
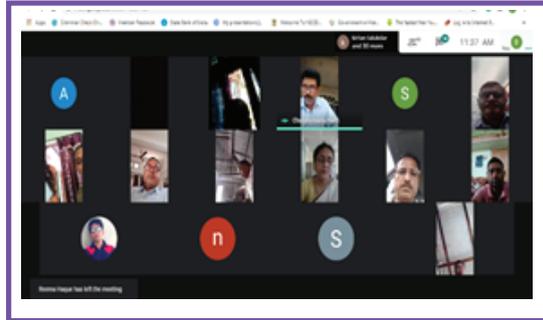
Activities covered under STEM for Girls



Online Session with Students



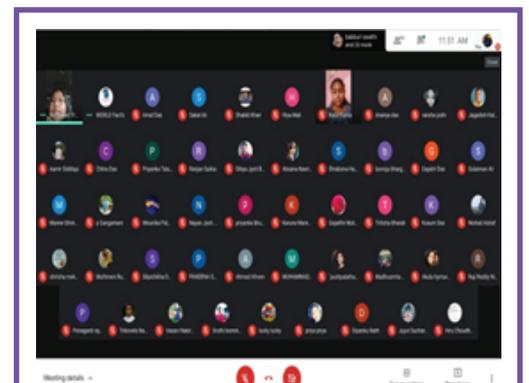
MEETINGS & INTERACTIONS



Online Teachers/HMs meeting



Parent's meeting



Teacher's engagement

Role Model Interaction



STUDENTS ARTEFACTS

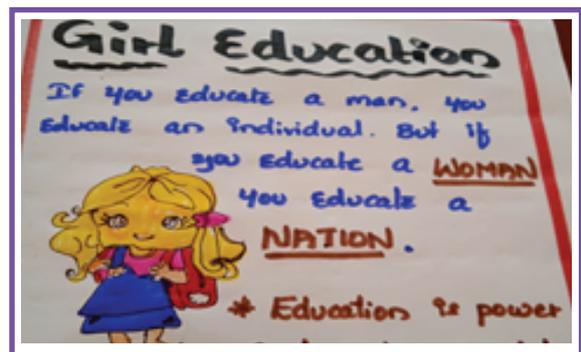
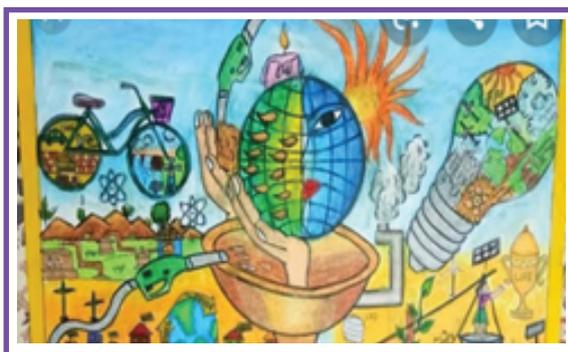


Classroom session with students



Scratch activity

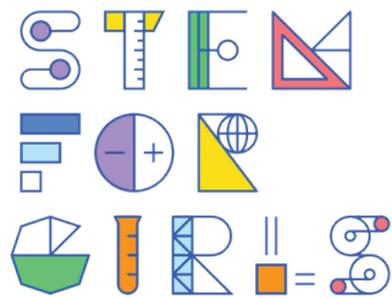
Community engagement





STUDENTS ARTEFACTS





For more information you can reach at siddiqui@defindia.net