Review of Jugaad (Innovation) Lab, Feminist Approach to Technology (FAT), November 2015 to December 2016

Jugaad Lab has established a unique after school learning opportunity for girls from low income neighbourhoods to explore and learn science and math in a non -formal way in an informal space. The intention is to invoke a gradual interest in science and math among these girls so that they can study these subjects in their senior classes and encourage them to pursue careers related to science and math. In the long term, by doing so, the aim is to break the barrier that girls cannot pursue science and math. In addition to this, girls can be the agents who work on simple technologies to offer some solutions to the everyday problems faced in their communities. In the long run the programme also aims to develop feminist leaders from this group of girls.

This review focuses on the work with the first batch of girls at the Jugaad Lab between November 2015 and December 2016.

The context

FAT mainly works with young, adolescent girls from socially and economically disadvantaged migrant families living Lajpat Nagar area in South Delhi. These areas include Zamrudpur, Nehru Nagar, Jal Vihar, and Garhi. Most parents work in the informal sector and earn a low income. A large number of the women work as domestic workers and hence their daughters have to look after the households in the absence of their mothers or assist their mothers with their work as domestic workers. FAT team has observed over time, as in most of low income households, that sons are given priority to get education and the girls attend, if at all, the government schools in the area. As the girls enter the adolescence years, restrictions are imposed on them whereby they are even deprived of a high school education. A large number of girls do not study beyond secondary school. In this context when access to basic regular education is tough, FAT argues that girls do not have opportunity to pursue or explore education in science.

For this reason, the Jugaad Lab Programme seeks to provide girls with a better understanding of STEM (Science, Technology, Engineering, and Mathematics) education – to learn beyond the school's mainstream curriculum; engage in hands-on activities; and engage in barefoot curriculum. The Programme seeks to enhance the basic understanding of science and math – both conceptual and applied. The Programme believes that this is possible by making it interesting and attractive for them, and by providing a supportive environment. The effort is also to build their confidence and enable them

to change theirs and their parents' attitudes towards education in science and math and finally encourage them to pursue such education in high school and beyond. The intention is to provide a "scientific playground of sorts" to the girls to develop an interest in STEM related subjects to subsequently engage in practice and research in STEM[1]. It seeks to challenge the internalization that the performance in school in science and math determines their ability and aptitude to build things based on scientific principles. The Jugaad Lab aims to change this through experiential learning as against rote learning practiced in schools and tuition centres. This will lead to curiosity and interest in science and math, and also improve their performance in school. In this process, the FAT team will also understand which kind of interventions work in leading towards the goal.

The initial steps

The initial focus was to create a space for girls from ages 12 – 20 to learn concepts of science and math and integrate them in their daily life. The Lab started with a batch of 8 girls but the FAT team soon realized that the girls had no conceptual clarity of fundamentals of science and math that would have been taught in school. The girls wanted the FAT team to assist them with their school curriculum to enable them to score better or pass the exams. Other factors also affected their participation - social and familial pressures that restricted their mobility; household responsibilities; and after school tuitions to enable them to perform better at school. Due to the mismatch of the vision of the Project and the expectations of the girls, the FAT team decided to discontinue the work with this batch.

The plans were then reformulated and the new focus was to work with girls from grade 6 onwards – girls from age 10 -15. It was decided that the girls would be taught basic science and math and also to apply science and math in everyday world through projects to further their understanding of the school curriculum of the two subjects. The focus on projects was inspired from Makers Movement, a movement that encourages learning of science through doing.

This batch of the Jugaad Lab worked between November 2015 to December 2016 with a two months break from regular curriculum to focus on school exams in February and March 2016. During these two months of exam time there were multiple requests to provide tuitions and assistance with exams. Discussions within the organization showed that the team was clear that they would not provide tuitions and lose the essence of Jugaad Lab being a creative space. Instead, girls were assigned mentors who

[1] From FAT's Progress Report submitted to Empower; Narrative Report; February 29, 2016

would guide them through their school studies. The team responded to multiple challenges and came up with solutions. In the course of these 14 months, they have had ample opportunities to identify what would work well in the Lab.

In brief, the Programme sought to:

- create a free space that encourages curiosity and interest in science and math
- remove the fear of science and math
- improve school performance in science and math
- enable the team to understand which interventions work well
- address social issues, gender, patriarchy, sexuality, and feminism
- encourage feminist leadership.

Aims and methodology of the Review

This Review seeks to analyse the 14 months of the functioning of Jugaad Lab. During this period the focus was on the Lab's curriculum for 12 months and on school curriculum and exams for the other two months.

The methodology used is a review of the documentation; interviews with team members and few members of the larger FAT team; discussions with most of the participating girls; interviews with a few mothers of participants; and interviews with some experts associated with FAT. The attendance records were also analysed at length and major findings have been presented during the course of the report. Following persons were interviewed:

- Ms. Gayatri Buragohain, Executive Director FAT
- Ms. Monika, Programme Associate, Jugaad Lab, FAT
- Ms. Aakriti Gupta, Programme Associate, Jugaad Lab, FAT
- Ms. Lalita Singh, Intern, Jugaad Lab, FAT
- Ms. Mridu Kamal, Programme Manager, FAT
- Ms. Jayanthi Pushkaran, Empower Foundation
- Participants
- Select mothers

The discussion below is organized on the basis of the key intents of the programme and significant aspects that emerged during the review.

Jugaad Lab: providing non – formal STEM education in an informal space

The initial experience of few months of working with the girls was useful to frame the lesson plans. One of the learnings had been that the conceptual clarity of most girls was poor and that the focus should be on the curriculum of classes 6 – 8 followed in government schools in the area following Central Board of Secondary Education (CBSE). This would build a strong foundation for the younger girls and clarify the doubts for the older ones. In the initial period, the curriculum covered basics of science and math but in April 2016 curriculum for the remaining months was prepared in detail. The team also identified videos and other exercise material that would be used in the classes.

In my interviews with the girls they shared that one of their initial positive experiences was about the style of teaching in the Lab. They soon realized that the teachers here explained the lesson till the fundamentals were clear. Jugaad Lab was their first experience where a teacher was willing to explain repeatedly and not losing her/his cool. This was in sharp contrast to the school or tuition teacher who would reprimand or even hit the students. In addition to this, the work sheets, videos, and experiments and hands on approach were a new way of learning for the students which they thoroughly enjoyed. They spoke with excitement and pride about making electric and solar lamps, electric fan, water pump, hydraulic jack, and matchbox microphone. Painting on the walls was also a novel experience.

Girls also shared that they were initially scared to handle electric items. On pursuing the issue they shared that they were always dissuaded at home by their parents to touch electric items as they might receive “current”. But their fear was removed by the team here by explaining the reasons of receiving current and how it can be avoided. This example of electric shocks was also shared by team members. An older participant shared how she was not aware neither curious about the internal wiring of a fan but the concept is now clear to her. Almost all the participants shared the manner in which the concepts of atoms, protons, and neutrons had been explained to them – in an easy way that it was now embedded in their minds – and very different from school. All of them said that they preferred the style of teaching of the Lab and not that of the school or tutor.

In the initial period the team members had to persuade the girls to respond or talk in class. But ease to talk to the teacher increased with the realization that the teaching here was interactive – as distinct from school. All team members shared that the girls were curious when a new topic was to be introduced and were eager to know about it. They would chase the team member till their curiosity was satiated. They did not hesitate to stop the teacher if they did not follow or if they made a link with some other topic that had been discussed in class.

The initial visits to makers' spaces were a remarkable experience for them and mentioned by all the girls during interviews with me. The very idea of being able to make something on their own, either with wood or with electrical items, gave them an immense sense of pride and achievement. In response to my questions, they explained the scientific details (in simple language) of the working mechanism. I did not attempt to test their knowledge or level of understanding but it was clear that their conceptual clarity varied and this was not necessarily on the basis of age but each one's capability and interest.

Visits to makers' spaces and other exposure visits				
S. no	Date and day	Place	Number of girls who attended from those who attended the lab that month	Percentage
1.	14.11.2015 Saturday	Makers Asylum	11 of 23	47.82
2.	22.11.2015 Sunday	Nuts and Boltz	13 of 23	56.52
3.	06.12.2015 Sunday	Nuts and Boltz	16 of 19	84.21
4.	20.12.2015 Sunday	Nuts and Boltz	14 of 19	73.68
5.	31.01.2016 Sunday	Planetarium	15 of 23	65.21
6.	05.07.2016 Tuesday	Environment Day event	12 of 12	100
7.	23.10.2016 Sunday	Nitrogen Ice-cream outlet visit	13 of 18	72.22

In addition to an improved understanding of science and math, some of the girls have started reading books and comics available in the Jugaad Lab. Menstrupedia is a particular favourite among the girls. In the recent months, girls have begun group reading as well. Another aspect of the Lab very dear to the participants is the exposure to computers. The team has introduced computers to them and they are learning the basics.

The Lab also provided exposure to places that the girls would not have been able to visit – such as Makers' Space and nitrogen ice-cream unit. The excitement of going somewhere in a group and being able to do something as carpentry or create an electronic item was beyond the realm of their imagination. In addition to learning something new, they learnt how to speak and work with strangers, ask questions, and gained immense confidence.

Jugaad Lab as a safe and hassle-free space

The focus of the team was to provide a space that provided an informal atmosphere so that it encouraged learning. It is significant to point out that for the parents the space was also safe and hence they allowed their daughters to attend the classes. A large number of the parents came to the Lab before their daughters started coming regularly. It was important for them to see the place and meet with the team members. Girls did not have to negotiate on this aspect with them.

Equally important was the outlook of the participants. For them the Lab provided a space that was distinct from school and tuition in that they could relax as well as learn. They could ask questions without any fear of reprimand or being judged. They could speak without any fears or ask the teachers to explain again if they were unable to follow. They could even come before class time and lie down or eat their meals. The team would ask them whether they had eaten or not and offer something in case they had missed a meal.

Once the girls were familiar with the team, they began sharing their problems at home or in the neighbourhood. This helped not only the girls but also the team as they got more insights into the lives of the young participants and the levels of negotiations they have to make in their everyday lives. And the participants found a space where they could share their concerns.

The lab provided a space to ask questions about the human body, about their own bodies, find some reading material to satiate their curiosity; ask questions about marriage (in the context of the team members); about sexuality (in context of transgender people seen on the streets); religion based conflicts (as seen in the neighbourhood); and about skin colour or race (in the context of Africans who they see and hear about). Body related issues such as body image, shaming, and menstruation were also discussed. It is also the space that allows them to express their gender concerns in terms of

freedom of movement, decision making, household distribution of labour, arguments between parents.

Learnings for the team

As there were no models to follow or from where the team could draw lessons, each step was a learning for the team. They had to figure out ways and strategies to make different dimensions of the programme work. To begin with, to be able to convey the essence of the Jugaad Lab to the parents was difficult for them as parents could only identify with tuitions. They had to convince them that their girls can learn in a non-structured way. In the course of the year, the team figured out the ways to keep the girls interested in the Lab and bring back few of the drop outs. The team had to re-strategize when the expectations of the girls in the first batch was different from the FAT's plans. Narrowing the age group of students to be enrolled was important as girls now came at the stage when conceptual clarity lays the foundation of future interest in science and math.

In a short time period, the team had to figure out which style of teaching works in a group, how to address girls who were disinterested, or ahead of the group, and even have a second lesson plan in place when the original plan had to be changed for some reason. Even central plans such as working with partners had to be reworked when partnerships did not work out and in a few months the team provided the options of making projects in the Lab itself.

The team also learnt that exams and performance was something they could not ignore. The girls or their parents would otherwise prefer tuitions. The team was clear that the Lab would not become a tuition centre but found a middle path whereby they focused on exams for two months and subsequently came back to the Lab's curriculum and even had classes for longer duration during the summer holidays.

However, one of the team members mentioned that initially working in groups was a problem as the girls wanted to work only with their friends and no one else. This issue was resolved over time with considerable discussions with the girls. Another aspect of teaching which was not easily accepted was peer learning. In some cases when some girls had missed certain lessons or were unable to understand a lesson, the team members would request another student to explain the lesson to the person who had

missed. This was initially met with great resistance by the person who needed the lesson and took time and effort to make it acceptable.

The team has to constantly revise the lesson plans according to the number of students present, and also if they have a specific request. There are times when the team has to repeatedly emphasize the importance of working with books and not with guide books. The team had to focus on a process of unlearning the earlier ways and alongside teach the new way. As per the government rules, the students are promoted till grade 8 and the first real exam they take is in grade 10. Many of them, according to the team, are not equipped to take grade 10 examinations and require both emotional and academic support. The team members shared that they have largely succeeded in inculcating an interest in the concepts of science and math – and this is one of their significant achievements.

Small beginnings

The short term objective of the lab was to encourage girls from low – income background to develop an interest in STEM education and innovation by making it more interesting and attractive for them. Along with this, the effort was to create an environment that supported them to take up STEM subjects in higher education. The team has clearly succeeded in providing an interest in STEM education and innovation, albeit among a small group of girls.

One of the main challenges faced by the team was to enroll participants and then retain them. Given the patriarchal nature of society and less importance to girls' education, unsafe surroundings, high street sexual harassment, age of the girls, transportation, and conflicts in the neighbourhood or among families on account of caste and religion, the team was up against a large challenge.

As discussed earlier, mobilizing girls was a task. The mobilization drive in October 2015 prompted 28 girls to enroll of whom 23 came for the first class, which is a very positive step in itself as it indicates that the girls were willing to learn more about something that was absolutely unheard of. The next round of enrolment was done in April 2016 at the beginning of the academic year. Few students joined later as well. There was a considerable variation in the regularity of attending the classes regularly – for example, among the girls who completed the course, the range of attendance varied from 44% to 90%. It is important to mention here as it reflects the multiple hurdles that the interested girls have to cross – the girl with the 90% could not attend classes for a whole month after enrolling as her elder brother was not in favour of her joining the Lab.

The following tables summarise the participation through the year.

Enrolment numbers			
Serial no.	Issue	Number of girls	Percentage
1	Number of girls who enrolled for Nov. 2015 batch	28	-
	Number of girls who joined in Nov. 2015	23	82.14
2	Number of girls who enrolled in the course of the year	51	-
	Number of girls who joined in the course of the year	45	88.23
3.	Number of girls who did not attend even one class	6	11.76

Of the 45 girls who joined			
Serial no.	Issue	Number of girls	Percentage
	Minimum period of engagement – One day	3	-
	Maximum period of regular engagement – 12 months	4	-
	Number of girls who dropped out	21	46.66
	Number of girls who received certificates of completion of the course	11	24.44
	Number of girls who were irregular or joined late	13	28.88

I asked the girls if attending the Lab had helped them in school science and math. Most of them promptly responded that it had helped in math but not so much in science. A couple of girls said that they had benefitted in both science and math while one said that attending the Lab had even helped her in social studies. Only one girl said that the Lab had helped her more in science than in math. But in terms of scores, five of the 11 girls who completed the course showed improvement in their examinations of science and math. Among the other girls as well, though exact data is not available, half the girls that I interviewed said that they had shown considerable improvement in math.

One of the younger girls said that by coming to the Lab she has realized that science and math is “part of everyday life”. Another participant, an older girl, said that she had felt “defeated” before she came to the Lab as she could not understand and performed badly. She says that she now has a hope that she can learn and perform.

In addition to the studies and projects, all participants shared that they like the Lab as they get to meet their friends in nice surroundings! One of the team members was of the view that some of the girls come here to enjoy the freedom they get and to relax. Further, some parents also send the girl here as both parents work and no one is there to keep an eye on them at home. She added that in some cases siblings fight at home and mothers prefer if one or both are sent to the Lab. The team member shared that some of these participants are not really interested in the work or in learning but come to be with friends in an environment different from home. In addition, one mother in my discussion with her mentioned that the reason she always encourages her daughter to attend the Lab is that she has learnt a lot of etiquettes, especially speaking in a more dignified manner.

Working with a group of participants with varying degree of attending classes was a challenge for the team. They had to work separately with the irregular students, or ask other participants to help them out. Two girls living in a far off area attend only on holidays and weekends. Turning them and other irregular students away was not an option as that would completely defeat the philosophy of non-formal education.

Girls who dropped out were visited or contacted to find out the reasons for dropping out. Reasons varied from relocating to a different area in Delhi, moving back to the village, safety issues linked to street sexual harassment, lack of interest, transportation issues, preference for tuition, and preference among the immigrants from Afghanistan to send their girls to Afghani school. According to the team members inability to cope and inability to read and write also led the girls to drop out. However, six girls came back after a gap of two to six months. None of these girls were given a certificate of completion but will be able to join the next batch of the same level to attend the complete curriculum.

The criteria for completion and getting a certificate were on the basis of being regular between April to December 2016. This would have ensured that they covered maximum course of Jugaad Lab.

Interactions with parents have been held at the Lab and the participation has increased over the year. The first interaction was scheduled in August 2016 where parents of seven of the 17 girls regular at the time attended the event. For the second event in December, parents of 11 of the 18 regular girls at the time attended. Both parents of three girls were present. Parents of other girls could not attend primarily on account of their work.

Challenges

Poor standard of school education - Poor quality of school education and hence the poor ability to read and write has been a challenge. Some of the participants of the Lab are not able to read and write according to their age and this forced the team to focus on some basics and rework their own curriculum.

Difficulty in mobilizing – It was initially difficult to break the mindset of their parents that learning can also involve doing things differently from school and tuitions in a manner that is not performance based or judgmental in any way. Many parents were not very keen to send girls to a place away from home to a place that did not offer tuition or a form of learning that they were familiar with. The team had to spend considerable time and effort to explain that leaning can be through a practical manner as well.

Irregular participation - Factors such as household responsibilities, shifting to another area in the city, or visiting the village for a longish period, or not allowing girls to attend the Lab due to instances of street sexual harassment, neighbourhood quarrels impacting the lives of the girls, and preference to tuition by parents were also responsible for irregular attendance or complete dropping out by girls. The team had to constantly follow up with the girls and their families, either through visits or often over phone, to find out the reasons for the absence of the girls. The team had to give special individual attention to the girls coming after a period of absence to make-up for the time lost. However, it is important to note that at no point were girls discouraged from attending after a gap. They had to also plan the timings of the Lab around the school and tuition timings to ensure that the girls could participate regularly.

Varying levels of proficiency - In addition to the absence, the team had to deal with the varying levels of proficiency of the girls. They had to constantly devise strategies to work with them at the same time. Very often this required spontaneous action without breaking the rhythm of the class. As there are many young participants, interpersonal issues crop up that need to be addressed by the team as the girls refuse to or want to work with someone particular.

Demand for support during exam time - The team had to cater to the demands of the group and the parents to provide support with school studies, especially around exam time. This has led to a revision of plans and the curriculum and schedules of the Lab had to be reorganized. The team took a two months gap from the curriculum to focus on the exams.

Safety concerns of the parents – Most girls walked to the Lab and parents were not comfortable with the girls returning home late in the evening. This led to change in the timing of the Lab so that the classes would be over before dark. Some of the girls shared that a couple of times they faced harassment on the way and then decided to come in a group. Options such as organizing a van for those

who came from a distance were considered but could not be executed due to paucity of funds. Subsequently transportation cost was provided by FAT to commute by cycle rickshaws.

Involving the parents and community members – Though the plan was to have regular meetings with the parents of participants and meet more community members, the team was unable to do so due to different reasons at different points of time ranging from shortage of human resources at the Lab; urgent need to recalibrate the programme due to the changing scenario; and finding the appropriate time when parents would be free. When they met the parents, it was difficult to explain about the Lab as they compared the Lab more with hobby classes than as something which will benefit their studies and also be useful in everyday life. The main concern of the parents is the performance in the exams and explaining the importance of the process was difficult.

During the course of the year couple parents withdrew their girls from the Lab on hearing about that few girls associated with FAT had moved away from home to live on their own, or that they wore "inappropriate and short clothes". These issues were then discussed in class as well.

Initially a community based programme was planned but it was not held at the designated time as the team was of the view that they did not have adequate success stories to share with the community. When the programme was finally held in a community, it had to be abandoned after a while as a few locals were harassing the team members.

Limitations within the team - In the initial period, the Lab depended on volunteers. The volunteers were not able to work at the Lab over a long period of time resulting in frequent changes and hence the participants, who were in any case dealing with many new aspects of pedagogy, needed time to adjust to a new person. Gradually team members were added to the team with the inclusion of an intern in November 2015 and a Programme Associate in September 2016. Two interns have joined in October 2016 who look after local travel, the equipment and books in the Lab, and are being to write daily reports. They have gradually taken over some of the administrative work from the other team members giving them more time to focus on the classes. Team members from the larger FAT team have supported the Lab from time to time.

Team members shared that they had learned a great deal on the job but would benefit from attending some training on teaching or even observing other experienced teachers. They also need inputs on how to learn deal with the curiosity of the young girls. Their learning primarily has been on the job and informal inputs from the larger FAT team. Another aspect they highlighted was their understanding of gender and violence against women issues. Issues of rape, street sexual violence, and sexual harassment come up in the discussions and these are handled briefly during the class by the Lab team. They have

held a few special classes where the FAT team members have addressed issues of gender, social discrimination, and violence. FAT team members pointed out that these issues need to be taken up again with the girls in an age appropriate manner.

Way forward

The initial phase of the Jugaad Lab clearly demonstrates that young girls develop an interest in science and math when explained through projects and experiments. Girls can link up basic scientific concepts with everyday life. But this is the first step towards the journey of discovering STEM education. These girls would hopefully continue to attend the Lab and move to the next phase of learning. The team has to plan the curriculum in such a way so as to sustain the interest of the group and perhaps introduce projects that have a direct relevance to their lives. Some of the steps forward are discussed below.

1. **Mobilizing** – Need to scale-up the programme. Mobilize larger number of girls to scale up the Programme. Brain storming within the organization and outside experts on how to scale up the Programme. The learnings in this phase will help identify ways of doing it and also the localities where the team can focus on. When explaining about the uniqueness or specialty of the teaching at Lab, dealing with the fundamentals and concepts should be the focus. This can be explained in simple language. Also highlight the achievements of the first batch to attract other girls and parents.
2. **Individual progress records** can be developed to record the problems, progress, school results, and special requirements for each participant. This can be updated on a monthly basis and would enable the team to identify the topics for revision. Records of school exams or tests are important to track changes.
3. **Planned revision exercises -** Have a systematic plan of revising the topics covered in both science and math. The team can devise a strategy to share this with the girls which should keep in mind that they might not come if only revision is planned for that particular day. So it can be clubbed with an interesting activity which can also be shared beforehand to ensure that they are present.
4. **Awareness on potential career options** - The team can identify the different options available to the girls after studying science and math. Besides medicine and engineering, options such as different technicians should be explored which can be studied at ITI, or specific institutes offering courses for medical assistants such as audiometry, optometry, pathology etc.

After this data is collected, these options should be shared with the parents and girls at one of the events that the Lab organizes in FAT itself.

5. **Regular field visits and follow up** - It would help to identify those parents who send their girls easily to the Lab to speak with their neighbours and family to send their daughters to the Lab. They can become advocates for the Lab. In addition to this, it is essential to meet with the parents on a monthly basis both to ask their observations and to convey their daughter's progress to them. This would also give more visibility to the team members and FAT in the area where their participants reside.

   Parents do interact informally with the team if they come to drop them to the Lab, especially when they go on trips, or to give them food. If any discussion is held during such interactions, it can be noted in the daily diary or any other similar records.

   Home visits can also shed light on not only the family's background but also give insights into the family's perspective of their daughter and also explain certain behavioural aspects of the participant. For example, during one of the home visits to a participant's home, the family shared with me that their daughter had an inherent anger in her. The team members accompanying me later shared that they had no idea about this though they had often noticed her stubborn nature in the Lab. Such specific cases need to be identified and referred to counsellors.

6. **Interaction with school teachers** - Try to interact with school teachers regularly in an informal way. This can open a channel of communication with them to understand their style of teaching. So far the team has only the students' version of their teaching. It could also open a communication channel between the teachers and students as many participants shared that they had not told their teachers about attending the Lab as they were unsure of their reactions. However, one student shared that the teacher was so impressed with her understanding of a particular lesson in math that she asked more about Jugaad Lab as well as asked the student to explain the topic to the whole class. Teachers can also tell their students about the Lab which can be another way of mobilizing.

7. **Build in monitoring and process evaluation** - Detailed monitoring plan should be drawn at the beginning of the second year that would focus on the curriculum, exposure visits, social issues to be covered, field visits, and a training programme for the team on pedagogy, gender, violence against women, and social discrimination (keeping in mind the requisite laws). This monitoring

should be done regularly by the team and an external person can help them develop it and come in for monitoring and process evaluation.

8. **Capacity building of the team** - As discussed earlier, the team would benefit with trainings on teaching methodologies, gender, violence against women, and social discrimination. The team would benefit if a senior member of the FAT team or an external person can handhold during a reflection exercise. They do such exercises informally but a systematic process will be beneficial. Further, interns also require some training in science and math to be able to take classes.
9. **Refine documentation process** - Though the documentation process is in place, certain fine tuning of content and schedules are required. This is primarily in the area of attendance whereby a consistent system to note the irregular or drop outs should be maintained. Follow-ups with these students should be recorded both in terms of dates and the reasons for being irregular or dropping out. Similarly, there should be some record of the reasons for joining back after a considerable time. This will enable the team to understand the range of reasons for doing so and then use this as a leaning for the future batches. Even the reflection exercises done by the team should be documented.

   Documentation of meetings and interactions with parents would enable the team to reflect on the role of parents' engagement with their children and also the Lab. It will also assist the team in understanding the parents' point of view. Both formal and informal visits should be documented.

10. **Differential learning** - Now that there are five full time staff members, discuss possibilities of working in groups with the girls based on their capabilities. Differential learning has been considered by the team as well. There should be quarterly progress documentation for each girl that will enable the team to plan inputs for each participant.
11. **Number of working days** - In the next phase of the Programme, the team will require more resources as they will work with the present group and the new batch. The team shared that they were considering keeping Sunday as the off days as the girls do not have even one day break in the week. If the team plans to give Sunday as an off day, it should be done after a discussion with the girls and their parents. It needs to be identified whether the attendance on Sunday is consistent due to computer classes or that the girls have no problem in stepping out on Sundays as well.

12. **Assistance to read and write** - In my interactions with the girls I found that some of the younger ones hesitated or were unable to write simple sentences in Hindi. These girls later shared that they would like more assistance to improve their writing and reading skills. A member of the team can spend some time on the reading and writing skills with the new batch – or during the holidays. But this should be done only with girls who have been regular at the Lab to ensure that their primary interest matches with intention that of the Lab. The main focus of the Lab would not be lost.
13. **Support with English** - One of the demands that came up from the girls was their inability to speak or understand English. As it is not possible to add spoken English to the present curriculum, the team members can introduce simple conversations in their daily interaction – especially when nothing is being taught. This would at least provide some familiarity until there is time and resources to hold spoken English classes.
14. **Contact other individuals working on science and math** - Involve individuals if access to makers' space is not possible. This can be done by inviting experts to your Lab. Such people work with private schools and can be contacted to explore a couple of classes.
15. **Feminist leadership** - One of the objectives of the Programme is to encourage feminist leadership. As of now no work has gone in this direction and the team could reconsider whether this is possible at the age of most of the participants. The issue is not only about leadership but also feminist leadership. Concepts such as gender and patriarchy need to be introduced in an age appropriate way.

Surabhi T. Mehrotra

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