

The Extraordinary Inventor



Within the bright yellow walls of a spacious room in Golden *Basti* (an expansive slum settled in West Delhi), there is a debate ensuing about Ram's* age. Arguably, he does look older than his years, and he is certainly wiser than most 13-year-old boys, "1st January 2005, I was born. So, I'm not even 14 yet," he declares. This enthusiastic young boy from a village in Bihar conducts himself with an easy frankness, speaking articulately in a respectful tone, as he explains the disparity between urban and rural dwelling, "I've been living here since two years. I used to live in Bihar before that—at Dharbanga—and I liked living there better. Everything looks better. Everything that isn't in Delhi is there in Bihar. Like we had clean and fresh rivers—we used to drink water from them, we had farms on all four sides, houses—everyone lives together harmoniously. Here, there are a lot of fights. Mostly they fight for water. There's a great shortage of drinking water here. People here are not right. They fight over small things. If I didn't study close by, we would have left long ago. I don't want to leave this place, but my mother doesn't like it." It is clear that he is loyal to his roots, "This time when I went to the village, everything was different. There are three water tanks in the village now. I went for just 7 days, and everything has changed there. There's even paytm (e-wallet)! Earlier there was not even one shop there, but now it's become just like the city. There were no ATMs in the village, now there's one very close to my house there."

However, there is one aspect of the city, which he prefers to its counterpart in the village; "I go to school. I've been studying since class five, now I'm in seventh. I used

to go to school in the village too. I was in fourth class. I was studying since Nursery.” Ram’s parents were sure to have him enrolled in the nearest school as soon as he migrated to the city, “First I studied for one month—learned to read Hindi. I had my Aadhaar card, so I got my admission done. I like the school here better, because in the village there was no teaching. I didn’t even know how to write my name. When I came here, I learnt English, Hindi, Maths, everything. I only knew Maths in the village, because they focus on Maths the most. I don't know why,” he shrugs.

Even in the city, the complexities of school admissions did pose an unfortunate hurdle in his pursuit for education. Two years ago, when he was seeking admission, he was age appropriate to attend school as a seventh grader. However, he was enrolled in the fifth grade. “My two years were wasted, for no reason. I went to get admission in Sarvodaya Vidyalaya (a local government school branch), where they said that if I have my birth certificate, I could be enrolled in seventh grade. I didn’t have it, so they said I couldn’t be enrolled. Then, I was admitted to Nagar Nigam (another government school in the vicinity, where he was enrolled in the fifth grade).” Schools often enroll students in grades according to their comprehension skills and literacy levels instead of using age as the only criteria, which is probably why Ram was enrolled in fifth grade in his current school, where he has now performed well for two years, “I scored my highest marks in Science. I was in class six; I’ve just got into class seven. Here, the studies are even better than the private schools in the village. The teachers say, ‘If you don’t understand, you can ask us 100-200 times, but you must understand’. They teach us each letter, one at a time. Of course, if you don’t understand, they hit you. But they explain to you first, and then hit you,” he mentions flatly, “But studying is the best. Principal ma'am says that if we face any problem, we can tell her.” Even though the quality of education may be better than that in village schools, there is a clear violation of codes of conduct by teachers in urban government schools as well.

Today, the residents of this slum are preparing for a wedding ceremony that is to take place this evening. As the resounding rhythm of drums travels through each lane, Ram shares his impressive study routine, “When the school is open, I wake up at 6 AM, get ready and school starts by 7:30. At 2 PM we’re dispersed. I come back and then I get one hour—at 3 PM I have tuition. In that one hour, I stay at home, and the stuff that I’ve done the setting of, I turn it on again to check how it’s working—the things I’ve made myself. If it works, it works. If it doesn’t work, I go to tuition at 3 PM and return at 5 PM. Then, at 5:30 I go for computer class, come back by 7. We have a two-month break (summer vacation) right now, but I’d been going there for three months. On the 2nd (of July), when school reopens, the computer class will also start again. We have computer class on Saturdays in school, but I learn it separately as well. Now, we don’t have computer class (at school), because neither ma'am comes nor sir. My friends started going for this class (after school hours), so I asked, ‘How much money do they take?’ They said he charges ₹100 per month. So, I have a laptop, but I just used to stare at it. My brother would work on it, but I couldn’t. So, I joined the computer class. Before coming here, I was doing some schoolwork on the computer. I didn't even know what typing and all is, but sir

taught me everything. Currently, we have vacations so I sleep around 11-11:30 PM, and wake up around 8 AM.”

Unlike many other children of this slum, Ram has never been engaged in work. His family already has two working members, which contributes to their financial stability, making it unnecessary for him to misdirect his focus. “My father already used to live here (in Delhi), the rest of the family was in Bihar. Then my brother came here, and after that we also came, because it was just my mother and I in the village after my sister got married. My brother goes to work; he’s a salesman in Dwarka. My father also goes to work. I study, and my mother stays home. My brother studied till 10th and then left.” Ram, however, has bigger dreams, “I’d like to study till 12th, and then do an engineering course. I’ve made this light with my own hands,” he says, showcasing a long board fixed with a bright tube of light, “Now, I’ve decided to make a train with small motors that run on electricity. I made the design, but then a few days later it fell and broke. So I thought I’d definitely make it one day in my life, by becoming an engineer. This is my dream.”

Replicas of the light he has made were sold at West Delhi’s Dilli Haat, an artisanal market where Ram and his fellow ‘Aflateens’ successfully implemented the entrepreneurial skills they have learned through a collaborative project by CHETNA and the Meljol organisation, by showcasing their innovative products. This project is primarily aimed at enhancing the financial and social literacy of children across various locations in West Delhi. Ms. Heera, the facilitator at the Meljol centre in Golden *Basti*, explains, “In the beginning, we connected with the children, found a location for the centre, and conducted a survey to know the total number of kids (in the area). At first, we engaged 30 children, but now there are 135. This is an ARC,” she gestures towards the room we are seated in—vividly painted walls, a whiteboard, a few trunks and an assortment of literature—“an Aflateen Resource Centre. It’s like an academic club for street and working children. After they return from work (or school), we give them information related to social and personal well-being. We also tell them about hygiene and nutrition, because this community specifically needs that. We conduct weekly sessions on planning, saving, spending, and budgeting. We also tell them about entrepreneurship, business planning, and the understanding of self—how to identify your talents and turn that into a business. The motive is to make the ‘Aflateen’ self-dependent through entrepreneurship and making them financially and socially literate. We identify kids who are working or no longer going to school. CHETNA gets them admitted to OBE (Open Basic Education system) and our Street to School educator teaches them.”

At Golden *Basti*, a large chunk of the population is idol sculptors. The entrance to the slum is dotted by several half-finished sculptures of a variety of Hindu deities. The project aims to use realistic examples for practical learning. Says Ms. Heera, “If the kids have an idol that they’ve made at home, we tell them how to make it attractive and package it in a way that it can be used for entrepreneurship. You recognise your talent—maybe you can make drums, or you know how to sort garbage—and whatever you make out of that—like some people here make accessories out of fig

leaves—what rates should they sell it at? Through this, they get an idea of business planning.” Ram’s lighting device is a clear indication of how this spirit of entrepreneurship among young minds can be leveraged to fulfill daily needs. Says Heera, “He’s made a home lighthouse. He thought about making an emergency light. It can be fully charged to last an entire day. At the exhibition in Dilli Haat, they sold it for ₹150. The main motive is entrepreneurship. When they went there, they surveyed the market, planned and budgeted and applied the lessons practically. Some of them are even getting orders (for more products). The kids prefer to study first and then do certificate courses. They’ve planned to retain this as learning and develop their talents and learning process. They have a foundation now, so they can be entrepreneurs in the future. This is true for both school going and working children. The ones who go to school also do work. They make folders, do rag picking, etc. We teach them the difference between child labour and child entrepreneurship. There is no pressure on them, they are not being forced to work. They are doing it for themselves. We inform them about child rights as well. We get their bank accounts opened and tell them the benefits of it. Initially, they didn't even know the purpose of an ID proof. We also give information to parents regarding domestic issues. We visit two schools in the area to teach children in eighth and ninth grade about the same topics.”

Through the exercise at Dilli Haat, children accomplished various tasks such as market surveying, purchasing raw material, branding, packaging and comparative pricing of products to generate profit—to inculcate a spirit of entrepreneurship within them. The centre also aims to inculcate social awareness amongst the children through engaging activities. Heera adds, “This centre is called ‘*Naya Savera*’ (a new dawn), which has been named by the kids themselves. We do a club meeting twice a month. Their club is called ‘*Roshni*’ (light). This started with a voting exercise, with a proper ballot box. Through this, we wanted children to understand the voting process and its importance. Three leaders were selected through voting. The purpose of the meetings is leadership. The children discuss social and domestic issues amongst themselves. I don’t intervene in the meetings.” The project, which began in October 2017, also aims to make children aware of payment mechanisms, “We teach them about paytm, net banking, e-wallets, ATM, etc. Most of them have learned how to use an ATM.” The results of the project have proved encouraging; possibly due to the fact that the children are engaged as per their convenience, after their working or school hours are over. Heera concludes, “This community needs a person who can treat them as a friend. We work according to the child’s needs and availability. We don’t fix time and activities like a school does. If they are distracted, we talk to them about their personal interests, conduct activities, or teach practical lessons.”

Ram, who is a regular visitor at the centre, shares his experience at the ARC—“I started coming here six or seven months ago. When I came here, all the children were coming to this centre. So, one day I came and Heera ma'am wrote my name (enrolled him to the centre). I used to like coming here even in the beginning, and I still like coming here. We have received information about a lot of things here, like using paytm. I use it to pay the electricity bill.” The project also enables children to

gain knowledge about the functions and significance of banks, and ensures that each child holds a valid bank account. Ram shares what he has learnt, “The advantage of banks is that whatever money you spend just like that, you can save it instead, and deposit it in your bank account. So that in case of an emergency, it comes in handy. That’s why bank accounts are important.” Besides regular sessions with the facilitator, exposure visits are also conducted to promote a more holistic understanding of basic concepts. Ram elaborates, “We went to the Punjabi Bagh Post Office. There, we got to know how to open bank accounts. You can open bank accounts at the post office. We got the information that if a child deposits ₹1000 every year from the age of nine till 18 years of age, then we can get ₹1,00,000, or maybe ₹3,00,000 after 18 years of age,” he seems unsure about the details, but continues, “We also went to a place for a drawing competition. Whoever wins gets the prize” Ram explains how the MelJol Project promotes individual initiative, “What we don’t know, we ask ma’am. The extra money we save, we can deposit it in our bank accounts. Ever since ma’am said that this light needs to be made, that’s why I made the light, and I feel like I’ve found a purpose to move forward in life. Before that, I never even felt like I could—somewhere, in front of someone—show something I have made. I’ve built many things in the village, but I didn’t show anything.”

Ram is keen to share the long journey of developing, manufacturing, and finally marketing his product; “First, I had a light and a phone battery. One day, sir (a representative of the MelJol organisation) came and I showed him. I said that we would buy more like these and create something. Then sir asked, ‘Will you sell it just like that?’ I said no. Then I cut open a bottle, made a sample and showed it to ma’am. Then, everyone saw it and said, ‘It’s good, make it again’. So we got the stuff from Sadar (a vast market place near the slum) with ma’am, all of it—charger, pin, phone batteries, LED plate, and this fibre. Then I started making it. I wanted to make this light. It is an emergency light, like if the light (electricity) goes, it will be useful. Here, everybody’s light goes, but mine doesn’t—because I have this. So, it will be used here during emergencies. If the electricity goes while you’re eating, we can switch this on. That’s why I thought about making this light.” The light he has created is an LED contraption that can generate enough light to illuminate a small room in the slum, “And, this can also save electricity, because when a lot of lights are on, you can turn those off and just use this. If you charge it for a day, it will work for two days. This is the first time I’ve made this kind of light and the first time I went to Dilli Haat to sell it. I’d never even been to Dilli Haat! This is the first time I went to sell something.” Together, the children engineered eight such lights; “We sold one at ₹350, and another at ₹250. We sold two lights. One to a sir and another to a ma’am. But everyone praised me the most; they said that it’s better than the rest, that it’s the best. I like that everyone praised it.”

This light, however, is not the only thing he can build. When asked to elaborate, he casually remarks, “I can make a cooler. I’m designing an AC that you can put ice in...I’m making a plate that can dance like a flower petal, like it does in the AC. I have made one AC, but I’d built it in the village. There was no light (electricity) in the

village, so I used the phone battery to build an AC, because it's very hot in the village. There was no light in my house, only the generator's light. That's why I made the AC. It's there in my house. It's quite big. I made it by cutting open a drum. I removed the plastic from both sides, covered it from the sides and put one motor on both sides, and a long plate. Then I did the wiring for both, I had a soldering machine. It was blowing good air—I didn't even know what I was making—but it was blowing good air. I thought, great, I'll put it in the house. It worked on phone batteries. I'd put two phone batteries. Then I covered it from the outside and behind. It started blowing chilled-chilled air," he giggles. "Then I installed it in my house with glue, it's still there. I tried to take it out, but it didn't budge! If it could've fit through my window, I'd have brought it here. Ask ma'am, I'd told her that if I bring it, I'll install it in the centre."

Ram doesn't learn how to build things or innovate from his academic curriculum or extra-curricular activities. He is entirely self-taught in this regard, and describes it as an organic process, "It keeps going on in my head. I've collected many motors here, from remote control cars. I take them apart and take out the motors. I bought one for ₹250 and I just took out the motor. I keep making these things at home. Yesterday, I found a strange thing. I was trying to see how much power it has. I thought I'd take all these things and make a light that is open on all four sides, like the ones that are used for shows, which are put in very big hotels. I'm making a sample for that. I want to make that kind of light. Let's see...whatever I think of, I can build."

His sincerity and optimism is heartwarming, although the motivation behind it is still unclear. How did he nurture and develop this interest in mechanics and engineering? Ram explains, "When I was nine or 10 years old, since then. At first, I didn't know what a motor and all is, but my uncle has a garage. I used to go there, mess around. There was a motor there. It had good speed. I got a shock from the current so many times. One time, I made a mistake. My younger brother got an electric shock and his entire hand was hurt. Then, I understood that a current runs through this. Since then, I started observing what my uncle built. I started making small things, small cars, wooden objects, and even my uncle noticed and said, 'Wow, you build things well.' I said, 'So what? So do you.' Since then, I started building things. I was so scared of the current when my brother got the electric shock. I didn't even want to go near it. Then, I broke my mother's phone by mistake. I took out the battery and saw that it could be used to make small lights work; even a small motor could work on that. I thought, 'How does this happen?' Then, I even made and installed a big light in my house. In the village, you get bigger lights that are sold for ₹5 at shops. They're easily available. I bought many and put them all around my house. Phone batteries are also easily available; they don't even take money. Since then, I started making these things. I bought a soldering machine. I was fixing my phone once in the village, and then I fixed my aunt and uncle's too. But my soldering machine caught fire—even my hand got burned. My mother said, 'He won't change his ways.' Then, they brought me to Delhi. When I came here, I started going to school." The Aflaten Resource Centre here serves as an oasis in the midst of the

slum—providing a focal point for the children to direct energies toward—“I saw that this centre was here, and everyone would visit it. I asked my mother what happens here, and she said it’s a centre. Since then I started coming here. Even (Heera) ma’am didn’t know I could do all these things. Then one day I was building something at home, and ma’am came and asked what it was. I told her I was making a light, and showed her. Then sir came. Now I’ve built this, and I’ve designed a cooler. I just have to add a motor, because it doesn’t hold the load of the water right now. I’ll make it heavier, and have the sample ready. I’ll use a double battery from the phone, and then it will be portable. I feel good building things. My mother would yell earlier—‘You don’t study! You just build things all day!’ Then ma’am told her that this is my talent. Ever since she said that, my mother doesn’t scold me anymore.”

Golden *Basti* derives its name from the fact that it is situated near the Golden Park Circle in West Delhi. While the name itself may read like a contradiction; after a visit to the ARC, it seems fairly appropriate. This project taps into the potential of children, which might otherwise be dismissed. It not only provides support and legitimacy to their talent, but also offers the wonderful opportunity for children like Ram to create and market their labour of love, however humble the origins may be. Indeed, something glitters beneath the dusty surfaces of this elaborate slum dwelling. It is the future of its children, and it’s shining bright.

***Name has been changed to ensure anonymity**