PROJECT KALAM

A relentless effort towards improving the quality of school-level education in India

Parthivi Kapur

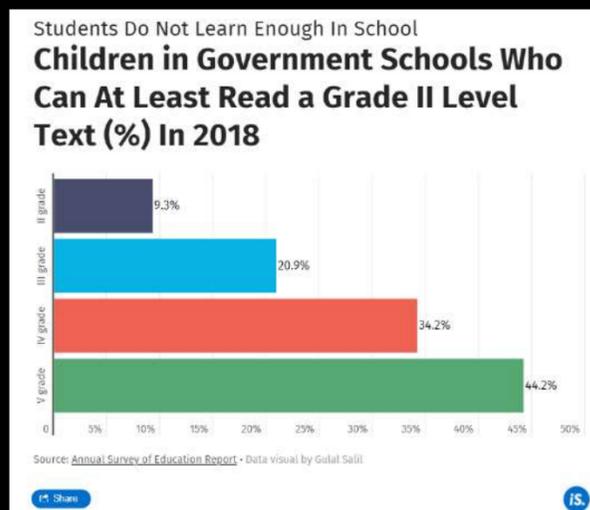Grade 10

Sardar Patel Vidyalaya, Lodhi Estate

17.08.2023

EXECUTIVE SUMMARY

The Problem

The glaring inadequacies in access to quality education cast a shadow over India's developmental aspirations. A substantial portion of students bear the burden of a system that falls short. The scarcity of educators and deficient facilities dampen the educational landscape, while the pandemic-induced digital divide further fragments the learning experience. A curriculum devoid of practical skills not only hampers employability but also reinforces gender disparities, perpetuating a cycle of unrealized potential. This dire situation demands a reimagining of education to break these chains and ignite a brighter future.

Please check slide 3 for more

Students Do Not Learn Enough In School

Children in Government Schools Who Can At Least Read a Grade II Level Text (%) In 2018

II grade — 9.3%
III grade — 20.9%
IV grade — 34.2%
V grade — 44.2%

Source: Annual Survey of Education Report • Data visual by Gulal Salil

Why Education

Education holds transformative power, unlocking dreams and potential. Yet, 15 crore children in India are denied this opportunity. My journey towards a brighter future for India's youth is fueled by a profound personal love and connection with reading and writing.

Please check slide 4 for more

Achievements   Please check slides4-21 for more

Fieldwork
3 One hour English Tutoring Sessions with NukkadPathshala: Enabling young students with communication skills essential in the modern world.

Community Project
STEM Kits – Sarasvati Vidyamandir School, Faridnagar UP
Igniting scientific curiosity and developing practical skills in in over 36 rural middle schoolers

The Problem

India's school-level education is in a pressing crisis, with implications for its socio-economic growth.

Despite improved enrolment over the years, over 50% of Indian fifth-grade students struggle with basic reading, while almost 75% grapple with basic arithmetic (ASER 2020) this figures remain subpar, even declining compared to a decade ago

Teacher shortages, with a deficit of over 1 million at the elementary level (Ministry of Education, 2019), hinder quality education, particularly in remote areas. Over 35% of schools lack basic amenities, contributing to a challenging learning environment. The digital divide has been evident during COVID-19, rendering online classes inaccessible for many.

The curriculum's inability to impart practical skills has led to a skills gap and youth unemployment. Lack of interactive content and spotlighting the use of school education has led to disinterest amongst students and a sense of hopelessness in parents with, high dropout rates, especially post-primary education, persisting. Gender disparities also prevail, with only 43% of females aged 15-18 attending school (National Family Health Survey-4, 2015-16).
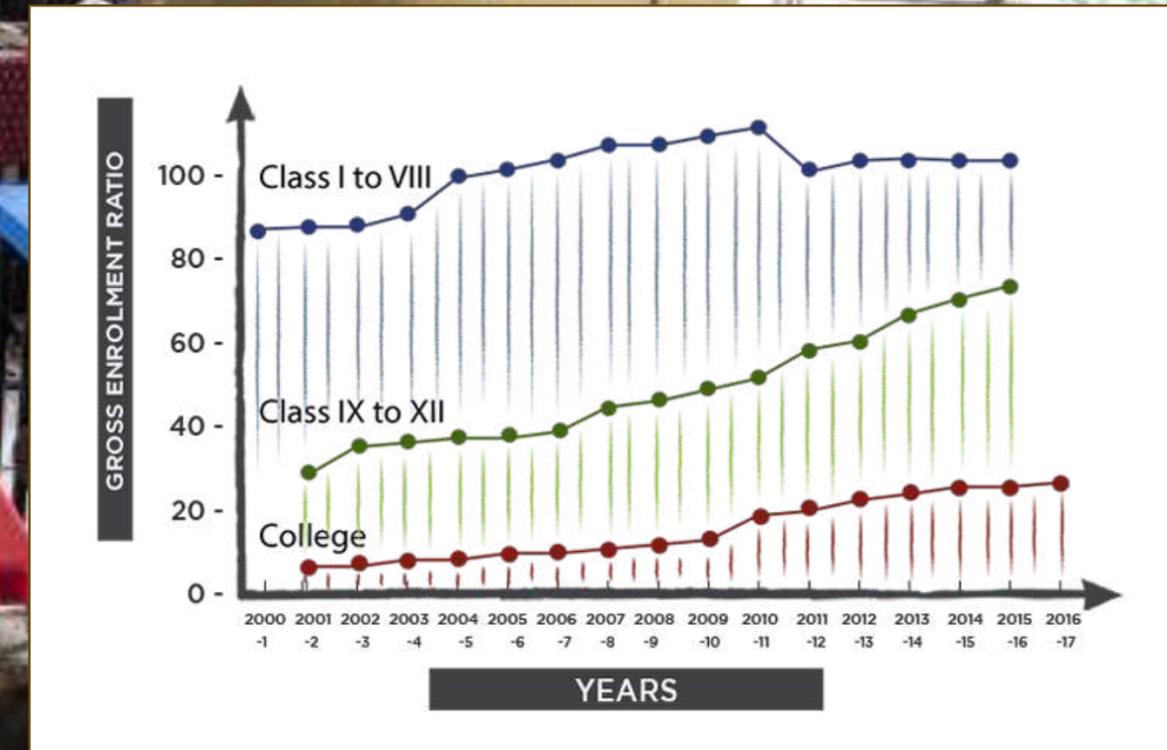
The Big Why

"If people cannot write well, they cannot think well, and if they cannot think well, others will do their thinking for them."
- George Orwell

Why I chose to work on education

'I want to be an astronaut,' my little brother exclaimed with boundless excitement, his eyes shimmering like stars as he jumped up and down on his little bed. His innocent dreams filled the room with hope, and I couldn't help but be touched by his aspirations. Amused yet moved, I replied to him with the same words we were all taught to believe in: 'Study well and you can aim for the stars.' With an unwavering smile on his face, he hurriedly scurried over to his cluttered study table, determined to embark on this celestial journey. I watched as he opened his books, each page, a stepping stone towards his dreams. But in that fleeting moment, a wave of introspection washed over me, and my heart ached for those whose dreams were shackled, their potential suppressed by the chains of circumstance.

I thought of India. I thought of the 15 crore children who are still denied the education they deserve.

I glanced at the inked papers on my desk, each one a page out of my heart and soul. Oh how I love to write. Would the symphony of words and thoughts still dance in my mind if I had never even been taught how to wield a pen?

Perhaps not.

My friend Aanavi had been learning Mandarin for a while now. I'd frequently snatch away her books at school and make unintelligible noises reminiscent of coughs as I pretended to be able to read every word, while she laughed away. Is that what books look like to 15 crore? Is that what the world looks like? Minds confined, thoughts absent, potential stifled?

1984, my favourite book. A brainwashed dystopia where even thought was a crime. Oh how I love to sit around and ponder over philosophical garb. What if when I flipped through the pages of my favourite novel, I didn't read, I just saw?

In the land of Saraswati, where books are deemed holy and education is considered godly, why is it that only a few are allowed to attain it.

I gazed at my brother, as he whiled away, colouring in his worksheets.

I switched the tab on my computer to that of a summer program I'd been pondering over registering for since a while now. I pressed a few buttons and the screen refreshed.

"Hello Changemaker, welcome to the tribe" it read.

GROUP FIELDWORK SESSIONS

English Tutoring with Nukkad Pathshala

THE TEAM

Aarna Sood

An XIth grade student at the Sanskriti School, Delhi.

Aditya Karnik

A Xth grade student at the Sanskriti School, Delhi

Parthivi Kapur

a Xth grade student at Sardar Patel Vidyalaya, Delhi

Partner NGO

NUKKAD PATHSHALA

> Nukkad Pathshala is a free after-school learning center set up in 'nukkads' of villages in India for students in KG-10th Standard.

707/708, Cyber One,
Sec-30A, Vashi,
Navi Mumbai - 400703, Maharashtra.

Phone: +022 2087 0050
E-mail: nukkadpathshala@nocpl.in
Website: www.nukkadpathshala.in

Over the course of three weeks, we held 3 tutoring sessions, on introductions; adjectives and descriptions; and tenses.
We adhered to the following standard process while working on these sessions:

1. Identifying areas we could work on
The team would get onto a call and we would brainstorm ideas on what subject area would be both useful and realistically conveyable in the given timeframe of one hour in the online medium.

ENGLISH ADVENTURES
Adjectives: Learn to describe :)

2. Once the topic was decided, we'd all divide it into subtopics
For e.g., during the introduction session. We divided the session into 3, the Ice-breakers, forming informative sentences via description games, and putting it all together into a proper self introduction

3. Once the subtopics were divided, each of us <u>would choose one to work on in the form of interactive games, puzzles and quizzes.</u>

For e.g., in the adjectives session, I decided to take on the

WHICH IS THE BEST WAY FOR ARUN TO INTRODUCE HIMSELF?

OPTION 1: Hi I'm Arun. Today is my first day at this school. What's your name?

OPTION 2: Well hey...but don't look at me like that. Uhh I'm scared.

OPTION 3: Hey, I like ice-cream

English	Tamil
Beautiful	அழகான
Happy	மகிழ்ச்சியான
Big	பெரிய
Small	சிறிய
Brave	துன்பத்தை எதிர்த்த
Clever	புதிர் வலியான
Honest	நேர்மையான
Strong	வலியான
Beautiful	மிகுந்த
Wise	ஞானமான

Adjectives are **Describing Words.**

<u>They give us more information about a person or object.</u>

Adjectives can be used to make your speech and writing sound more appealing and descriptive.

What sounds better?

1. I read a book.
2. I read an <u>interesting</u> book.

Hello everyone,
I hope you all are having a great day!

I'm Arun Iyer but you can call me Aru.
I am a grade 4 student at St. Thomas' school.

I live with my parents, two sisters and dog lacey in Ambattur.

I love singing and painting in my free time.

I'm very good at playing football.

I Look forward to being friends with all of you!

← Greetings

← Basic information – name, nickname, grade. School, etc.

← Family information – members, how you spend time together

← Hobbies

← Most special/unique quality

← Closure line

4. ADAPTING THE CONTENT TO REGIONAL REQUIREMENTS

Since the children at the NukkadPathshala speak Tamil as their first language, we decided to add translations for new vocabulary and make the content culturally relatable and understandable despite the language barrier.

5. ENSURING A FUN AND FAMILIAR ENVIRONMENT THROUGH INTERACTIVE GAMES

To make sure the audience is involved and on the same page, we'd include slides in the PPT which would compel the students to interact and grab their attention, whilst familiarizing them with the team.

THUMBS UP IF YOU LIKE.......

Candies and Ice-cream

6. MAKING SURE EVERYTHING RUNS SMOOTHLY

To ensure everyone is well versed with their roles, we would hold a run-through call 30 minutes before the session prior to which everyone would choose the part they're most comfortable with presenting.

7. SMILES ON!

After Joining the session, we'd make sure to keep our cameras on and make our best attempts at being approachable and explain the content as simply as possible.

Wherever it would be difficult to catch up, we would request Ms. Bharathi, from the NGO to translate.

However, by the second session we observed that the students were able to understand the content without any translation!
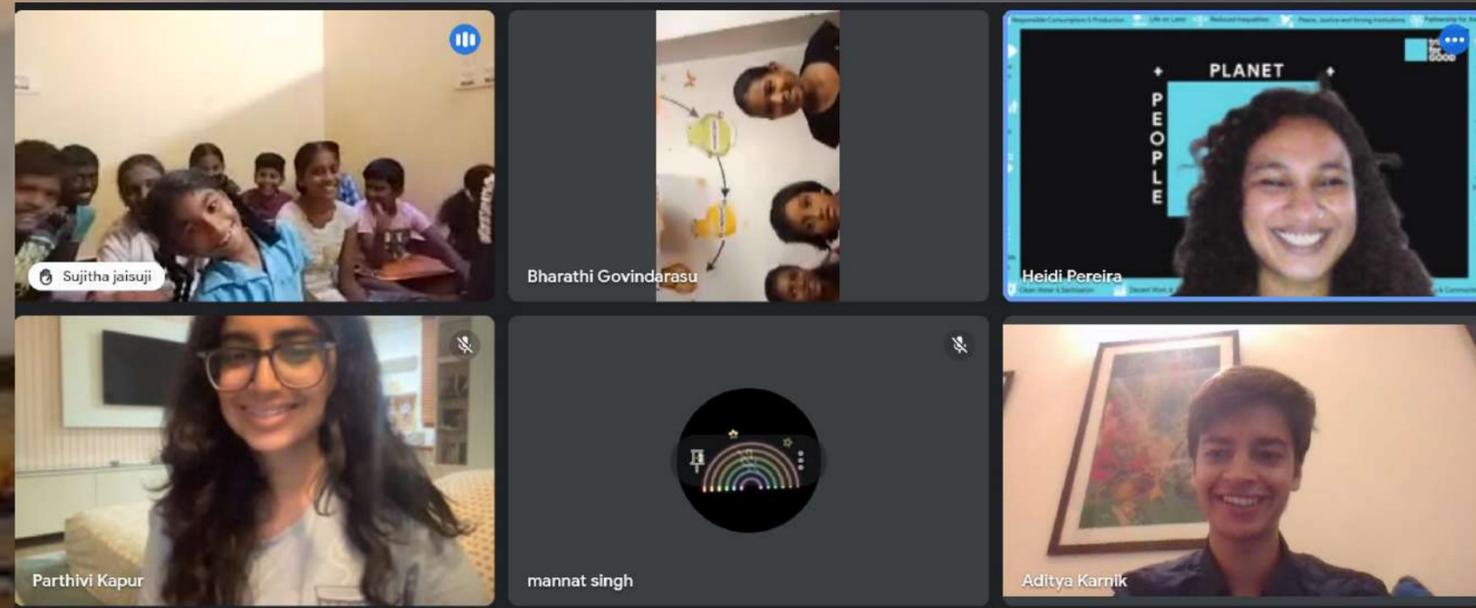
Google Forms

Thanks for filling out Reflections - Field Work

Here's what was received.

Reflections - Field Work

Hi Changewarriors! Hope your field work sessions are going great and you are enjoying them.
--> How to use this form?
1) Please fill this reflections form after each field work session.
2) We want to know what you liked/ what you disliked/ where did you struggle with/ what did you enjoy? So please don't feel shy.

How will it help you?
We will need this information to help you improve and create impact. You can access this when you write your university essays or need they recommendation letters !!!

Email *

8. POST SESSION REFLECTIONS

After the session was over, we'd stay back in the call and fill out a feedback form. At times we'd converse over how we thought we could make the sessions even more enjoyable and better, and implement those ideas in the forthcoming session.

9. ENSURING TANGIBLE AND LOG LASTING OUTCOMES.

To asses how much the students have learnt. We would assign homework which they would record and send back to us. This would ensure that they followed up with what they have learnt and would allow us, the team, to gauge what areas we can further work upon.
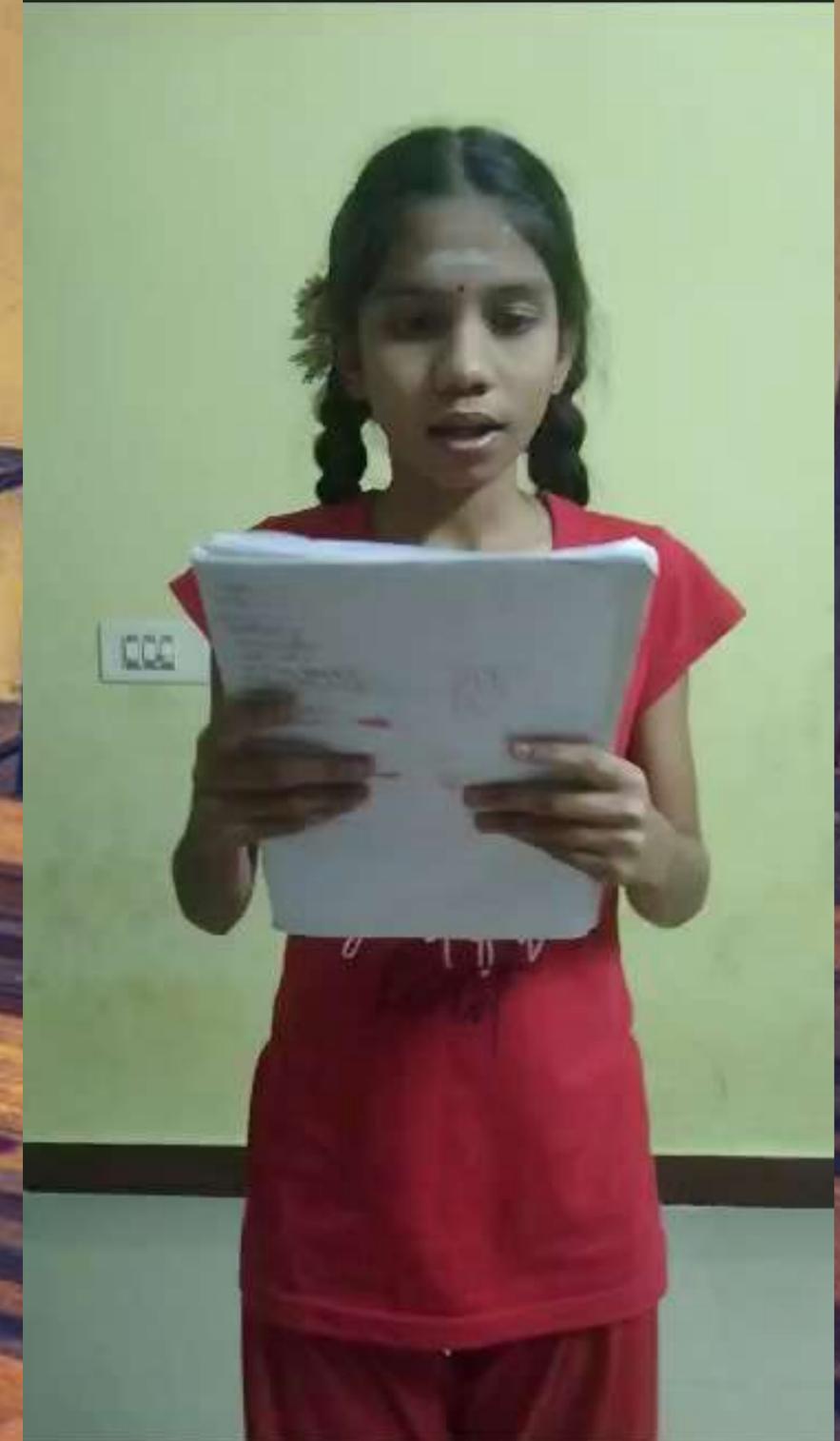
Videos students sent of their self-introductions as HW

SIGNIFANT CHALLENGES WE FACED IN OUR FIELDWORK	OUR SOLUTIONS
1. Language Barrier: it was challenging to communicate with Tamil speaking students whilst having zero Tamil speaking abilities.	11. a) We tried to keep the instruction in the simplest English we could speak, avoiding large and confusing words. b) Though we of course couldn't acquire fluency in Tamil in just two weeks, our team made efforts to add textual Tamil translations wherever possible, especially in vocabulary slides and also requested Ms. Bharati from the NGO to translate our instructions whenever required.
2. Collaboration and Differing Schedules: Being high schoolers (that too in the good old CBSE board) we all had jampacked study schedules and we found it hard to find timings that suited everyone.	2. a) We'd try our best to find common suitable timings, however when not possible, two of us would hold a meeting, get the details down and send the minutes of the meeting to the third team member who'd further add suggestions (if any) to the plan. b) Once the plan was finalized we'd work on the subdivided assigned slides, remotely on our own time.

COMMUNITY PROJECT
STEM KITS

Partner School-
Saraswati
Vidyamandir,
Faridnagar,UP

Curated and donated 18
STEM Kits
Impacting over 36 students
of 6th and 7th grade by
igniting curiosity and
instilling practical
knowledge of elementary
science via a unique blend
of education and fun.

The Process

I finalized 6 STEM activities (after surfing the web and taking suggestions from my science-geek friends)which would be both easy to understand and demonstrate. I tried to make the activities interconnected to minimize the material required and waste generation, for e.g., we used the same balloon we inflated in the acid base experiment in the electric charges experiment.

I started to procure the materials like food colouring, baking soda, citric acid beakers and droppers via the local market and of course, online sellers.
Also, I made sure to add safety equipment to the kit and use as much recycled material as possible

I had previously been to the primary branch of the same school for a previous project, and as soon as I received my community project assignment, I instantly thought of contacting the school's secondary branch in Faridnagar, UP as I wanted to work with middle-schoolers.

After contacting the school's management, we finalized a 1 hour, 8:00 morning session on 17.08.2023 to familiarize everyone with the kits, as they contained over 6 experiments and also I just felt that the experience of one-on-one interaction, is like no other.

We went through 4 of the activities on charges, acid-base reactions, capillarity and density, whilst providing logical explanations for the observations and giving further instructions on how to go about doing the rest of the activities.

Voila!

With just a bit of help, everyone managed to get a hang of how to accurately measure materials, absorb information and carry out the steps of each experiment.

All the students were eager to learn more about the science behind experiments, and many expressed their interest in reusing the kit and doing them again :)
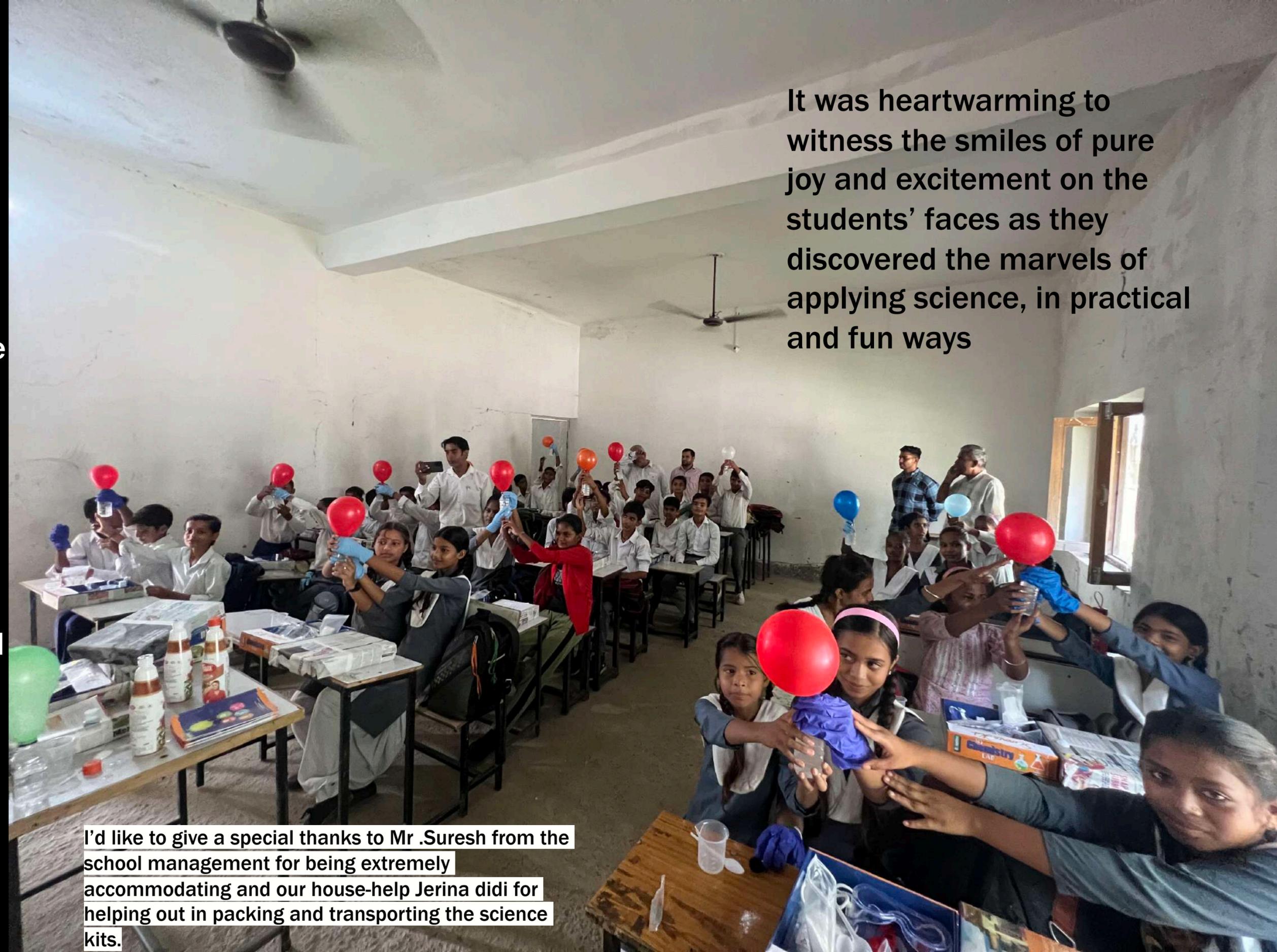
It was heartwarming to witness the smiles of pure joy and excitement on the students' faces as they discovered the marvels of applying science, in practical and fun ways

I'd like to give a special thanks to Mr .Suresh from the school management for being extremely accommodating and our house-help Jerina didi for helping out in packing and transporting the science kits.

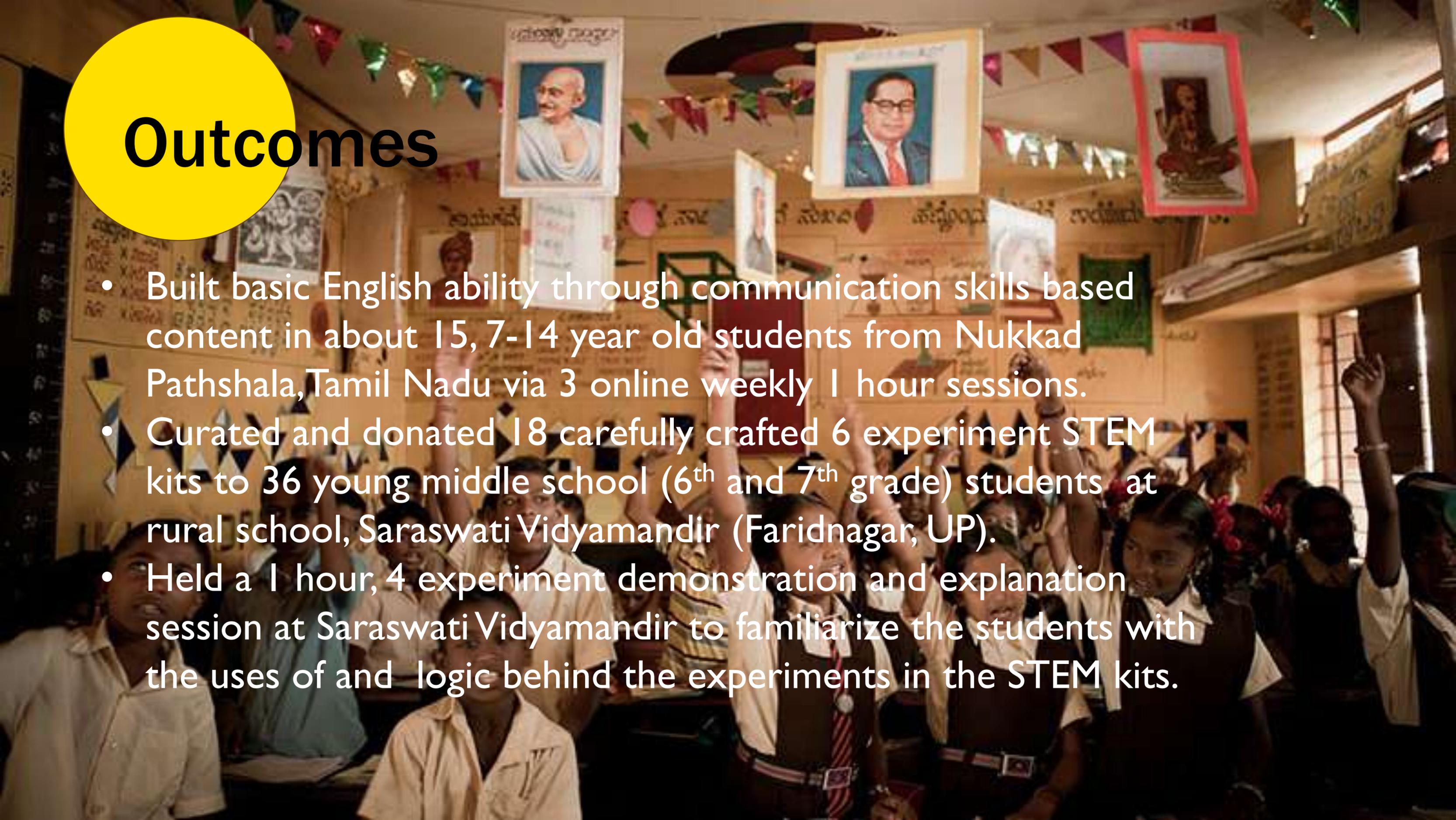| SIGNIFANT CHALLENGES FACED DURING THE COMMUNITY PROJECT	SOLUTIONS
1. Assembling Kits Efficiently: It was difficult for me to figure out how exactly to ensure sufficient material in all kits and make them organized whilst being cost effective and waste minimal.	1. I decided to use my strengths to my advantage, surfing the all-wise internet. Whilst scrolling through Pinterest idea-boards and google images of sample kits, I gained inspiration on how to assemble the kits. 2. To be cost-effective, I attempted integrating the kits with one another-for e.g., we used the same balloon we inflated in the acid base experiment in the electric charges experiment 3. To be waste minimal, I used newspaper and old discarded cardboard to assemble the boxes.
2. Communicating with the School Management; Though it was not an issue finding an organization to work with as I had previously worked with the primary branch of the same school, it was difficult to communicate the exact needs in terms of the facilities and timings required for the demonstration session, as I did not have a clear-cut idea of the school's infrastructure and usual functioning.	2. a) I coordinated over the phone with members of the School management and pointed out very specific quantified requirements, such as 13 desks, a sink near the assigned room, and timings which did not disrupt the usual school proceedings.

Outcomes

- Built basic English ability through communication skills based content in about 15, 7-14 year old students from Nukkad Pathshala, Tamil Nadu via 3 online weekly 1 hour sessions.
- Curated and donated 18 carefully crafted 6 experiment STEM kits to 36 young middle school (6th and 7th grade) students at rural school, Saraswati Vidyamandir (Faridnagar, UP).
- Held a 1 hour, 4 experiment demonstration and explanation session at Saraswati Vidyamandir to familiarize the students with the uses of and logic behind the experiments in the STEM kits.
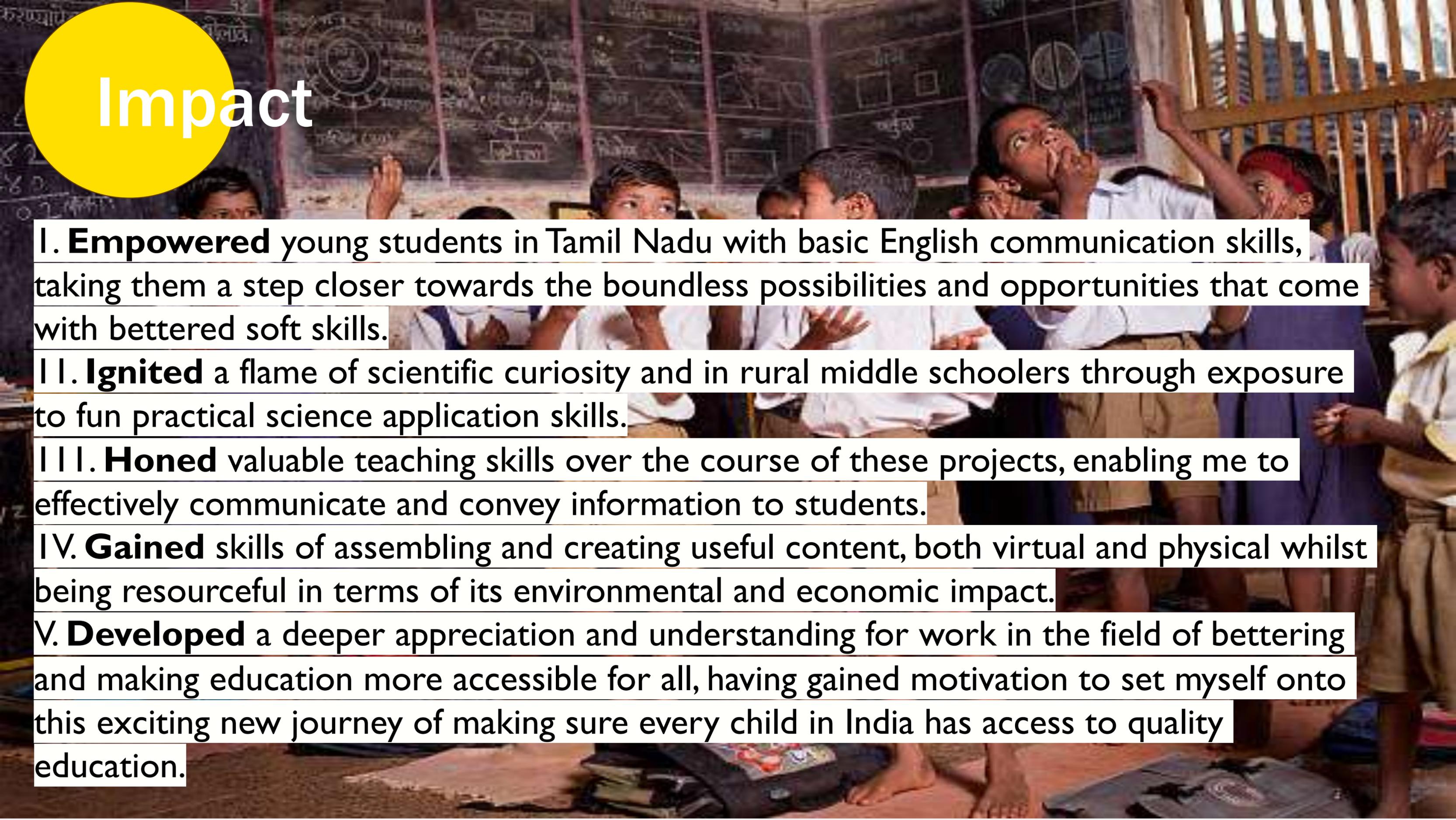
Impact

I. **Empowered** young students in Tamil Nadu with basic English communication skills, taking them a step closer towards the boundless possibilities and opportunities that come with bettered soft skills.

II. **Ignited** a flame of scientific curiosity and in rural middle schoolers through exposure to fun practical science application skills.

III. **Honed** valuable teaching skills over the course of these projects, enabling me to effectively communicate and convey information to students.

IV. **Gained** skills of assembling and creating useful content, both virtual and physical whilst being resourceful in terms of its environmental and economic impact.

V. **Developed** a deeper appreciation and understanding for work in the field of bettering and making education more accessible for all, having gained motivation to set myself onto this exciting new journey of making sure every child in India has access to quality education.
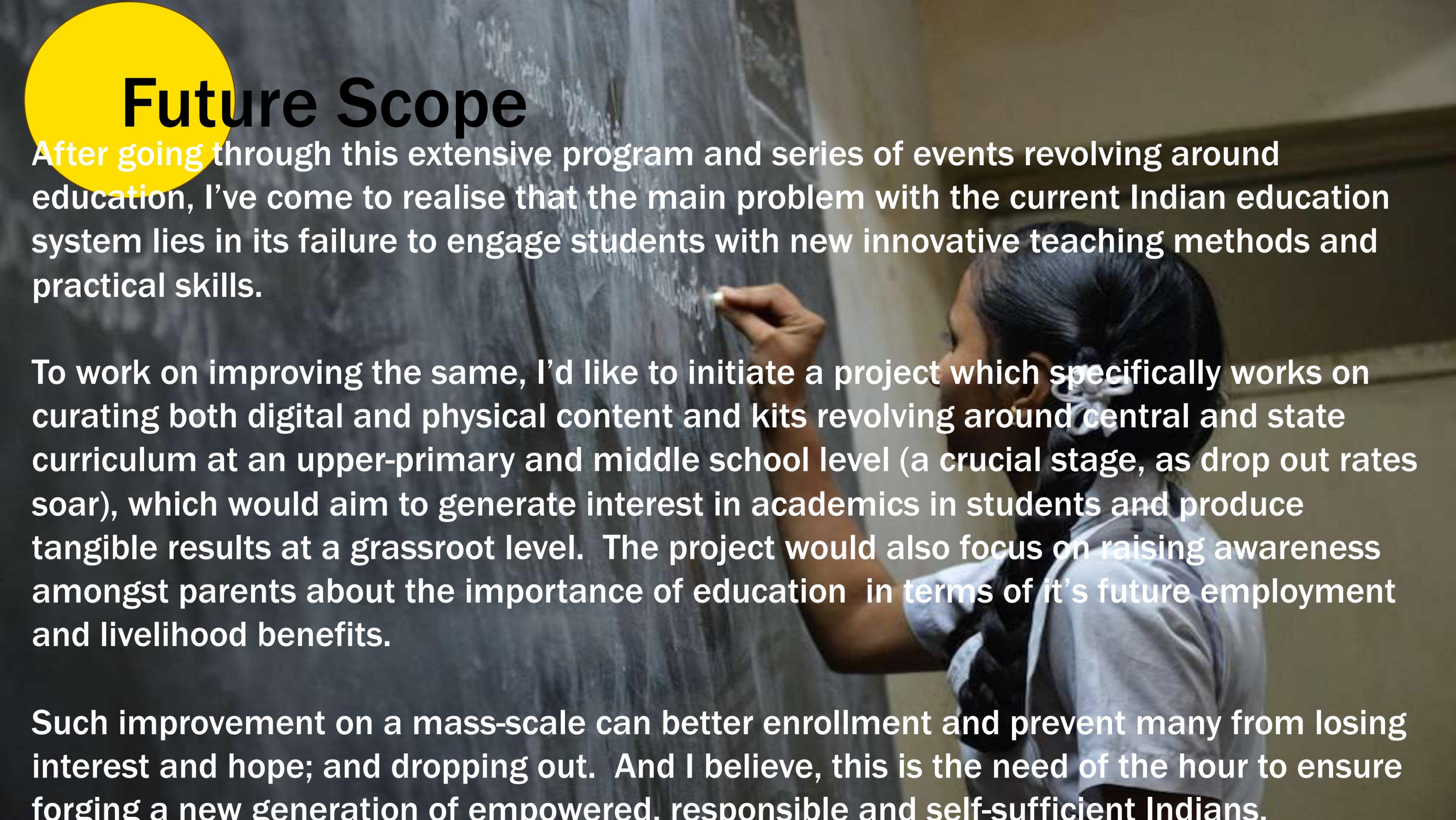
Future Scope

After going through this extensive program and series of events revolving around education, I've come to realise that the main problem with the current Indian education system lies in its failure to engage students with new innovative teaching methods and practical skills.

To work on improving the same, I'd like to initiate a project which specifically works on curating both digital and physical content and kits revolving around central and state curriculum at an upper-primary and middle school level (a crucial stage, as drop out rates soar), which would aim to generate interest in academics in students and produce tangible results at a grassroot level. The project would also focus on raising awareness amongst parents about the importance of education in terms of it's future employment and livelihood benefits.

Such improvement on a mass-scale can better enrollment and prevent many from losing interest and hope; and dropping out. And I believe, this is the need of the hour to ensure forging a new generation of empowered, responsible and self-sufficient Indians.

Thank You!