



INQUI-LAB
FOUNDATION

CONTENTS

01 The Problem

02 The Future

04 Vision & Theory of Change

05 Knowledge Skills Attitudes

07 Implementation Model

08 Research Methodology

09 Program Stats & Outputs

10 Outcome

12 Student-Teacher Stories

14 Future-Learner Stories

16 Our Learnings

19 Working with the State

22 Support Us

The Problem



INQUI-LAB
FOUNDATION

***Students are unprepared to meet the future demands.
They are un-empowered to create jobs and unskilled for the jobs available.***

Entrepreneurship and innovation indicators too are not good.

Entrepreneurial intentions and rate of early stage entrepreneurship have seen a decline over the 2016-18 period. This is compounded by an increasing fear of failure in addition to decreasing perception of capability and innovation rate in the country

[Entrepreneurship Monitor 2017-18: India Report](#)

Crucial Future Skills

Curiosity, imagination, creativity, problem-solving and innovation are the crucial skills and abilities which need to be developed and nurtured to thrive not only in the current generation, but also in the future.

[OECD 2014, Adobe Educate 2018](#)

Volatile Job Markets and Employability

“65% of jobs will change.
Kids entering primary school will grow up to jobs that do not exist today.”

[World Economic Forum – Future of Jobs Report](#)

Exposure to innovation during childhood has significant causal effects on children’s propensities to become inventors.

[Lost Einsteins: The Importance of Exposure to Innovation Report – NBER](#)



Unleashing **Innovators, Entrepreneurs** and **Changemakers** of the Future



Priyavarshini

Priyavarshini from the TSW Narsingi school has displayed tremendous agency in helping her village community during the COVID19 lockdown.

- She spoke to sarpanch to implemented social distancing guidelines in their villages through posters.
- She made and distributed masks to 20+ people in her village.
- She also researched on local hand sanitizers and tried creating using Aloe Vera and Dettol.



Shivani

Shivani too responded to the Covid crisis in her own way.

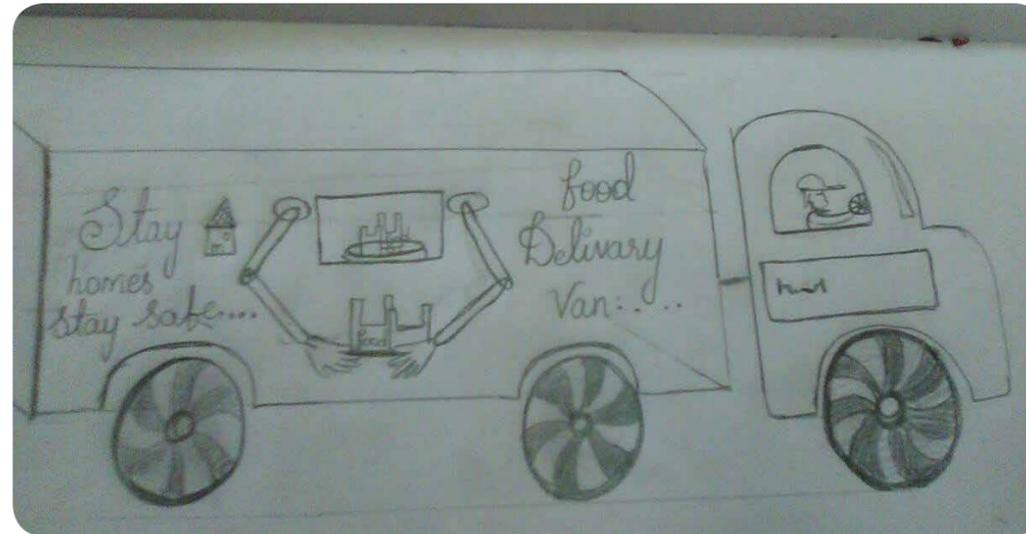
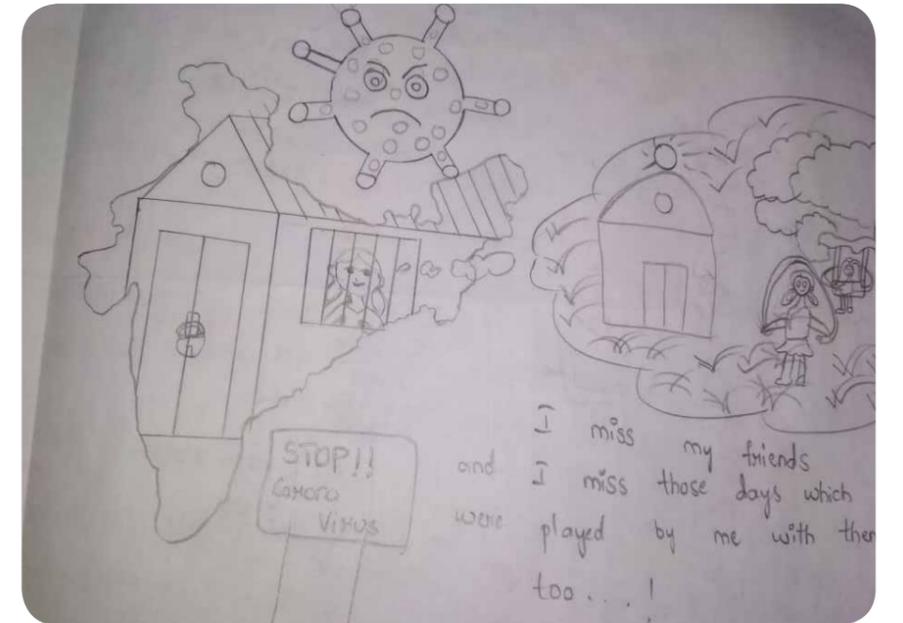
- She made some face masks to her family members and distributed.
- She made a video asking her friends to share ideas to solve problems related to Covid. Here's a link to her video - [click here](#).



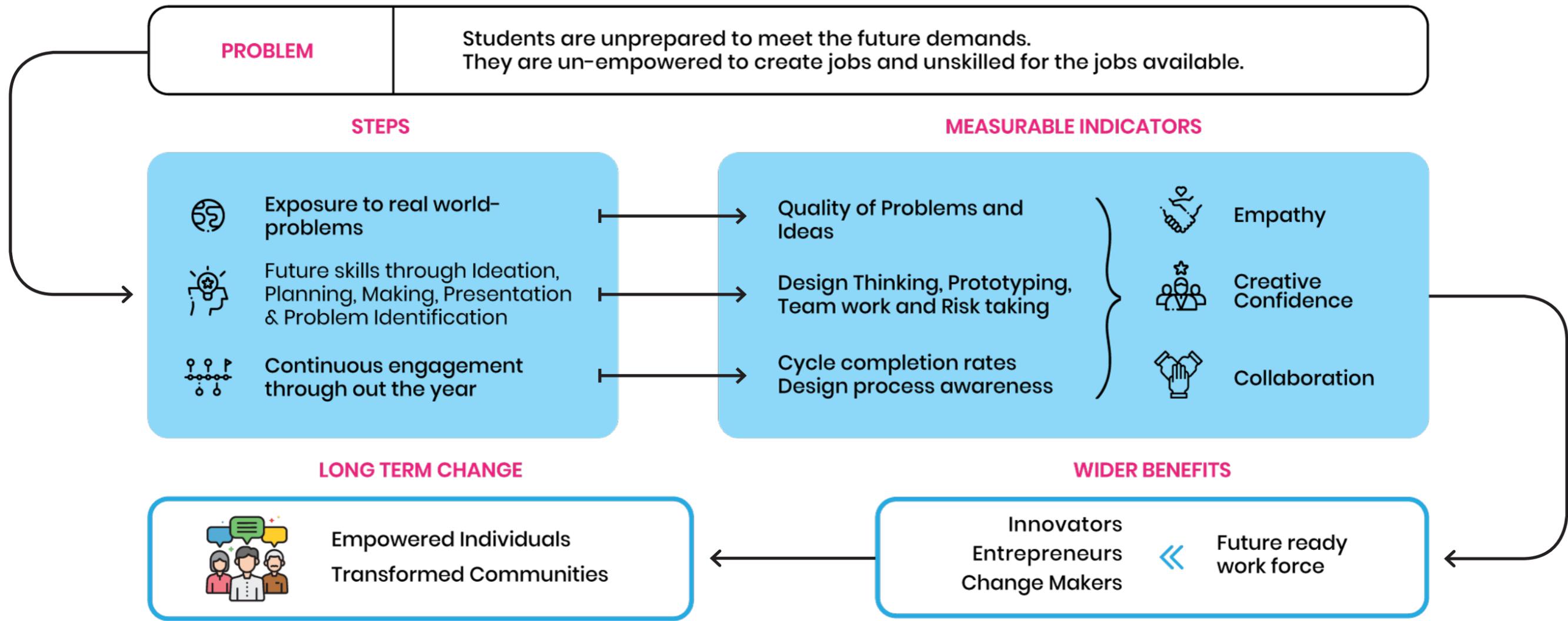
Unleashing Innovators, Entrepreneurs and Changemakers of the Future

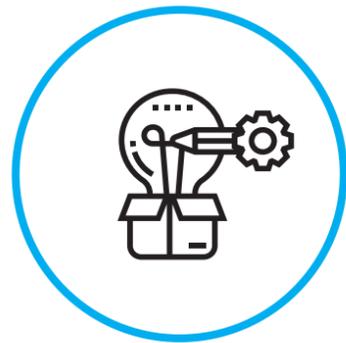


Due to this covid-19 problem, poor workers like, fishes men, pot makers, basket makers, casual workers, fruits or vegetables seller, etc. Fishermen cannot go out for fishing and if he don't go for fishing, he will not be able to sell and if he is not able to sell, he will not get money. If there is no money, they will not be able to eat food. Same problems with other poor workers. They and their family will suffer with lot of problems without work and money.



Our Vision : Nurture Problem solving capacity in the next generation

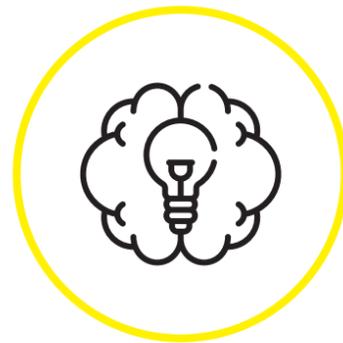




Prototyping



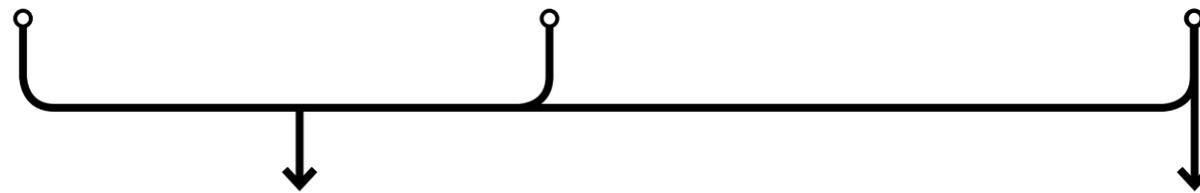
Risk taking



Design Thinking



Team work



Creative Confidence



Empathy



Collaboration

OUR EXPERIENCE FROM

THINK & MAKE PROGRAM

AT SOCIAL WELFARE SCHOOLS

2019-2020

In Partnership with



TSWREIS & SALESFORCE

Implementation Model



INQUI-LAB
FOUNDATION



**Think & Make
Innovation Program**



15 Schools
Onboarding of the
assigned Schools



60 Student Teachers
2 Students per classroom
were nominated to lead
the program facilitation



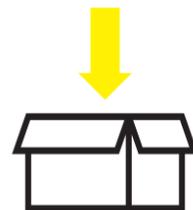
15 Mentor Teachers
1 assigned teacher per
school to support and
mentor the student teachers



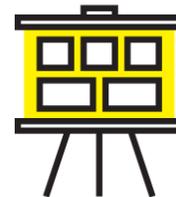
3-day residential training of
student-teachers



Allocation of mentor
associate to support and
monitor program in schools



Distribution of innovation
tool kits to the school



Facilitation of innovation
units by student teachers



Data driven
monitoring & support



**Closing &
Celebration**



- Check **implementation and completion** parameters for population.
- Done by Workbook Review of Team.



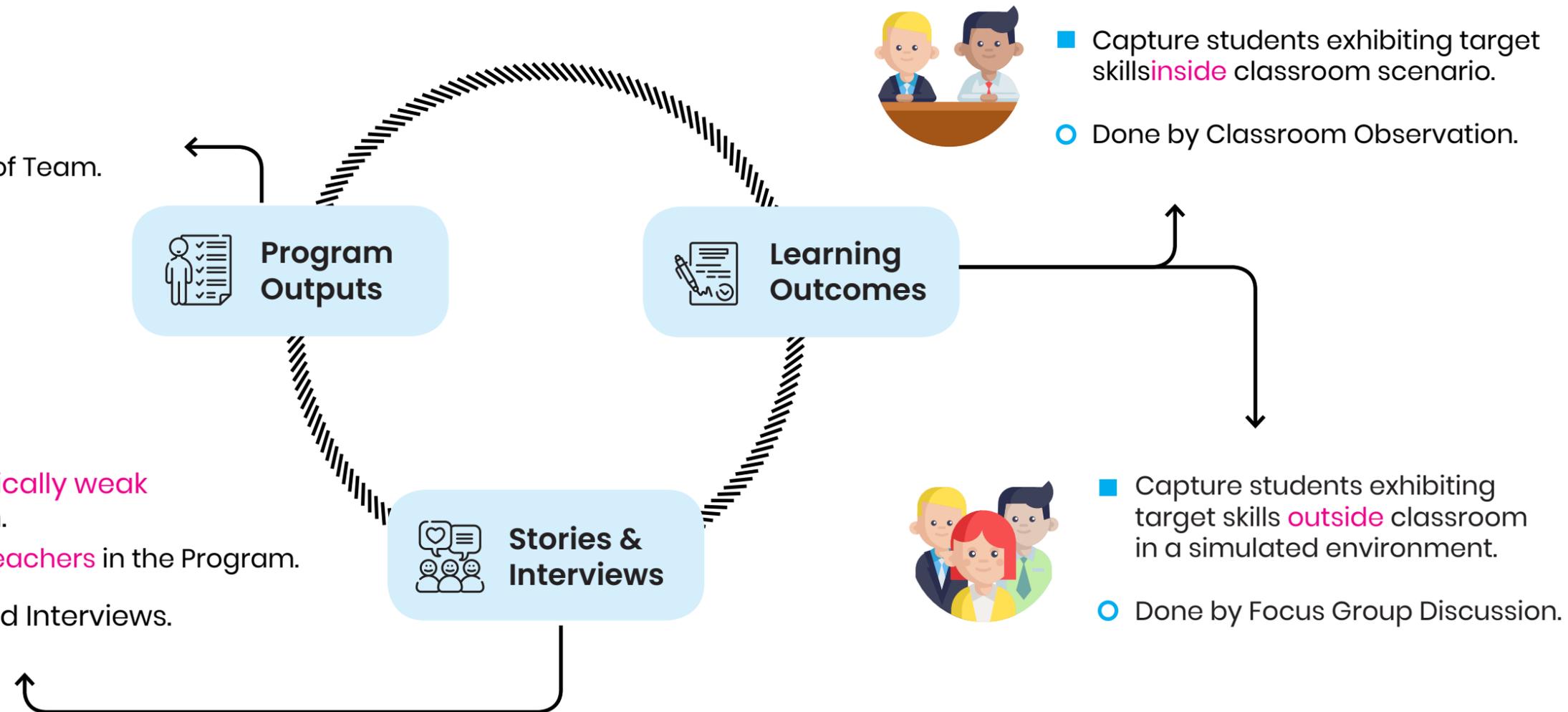
- Capture students exhibiting target skills **inside** classroom scenario.
- Done by Classroom Observation.



- Experiences of **academically weak** students in the Program.
- Experiences of **Student-Teachers** in the Program.
- Done by Semi-Structured Interviews.



- Capture students exhibiting target skills **outside** classroom in a simulated environment.
- Done by Focus Group Discussion.



■ What we did ○ How we did

Program Stats & Output



INQUI-LAB
FOUNDATION

Program Stats



60 Students trained as
Student-Teachers



15 Schools



15 Teachers

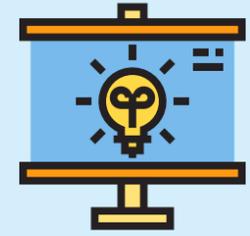


1200 Students

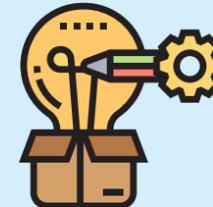
Output



570+ Plans were
submitted



870+ Student
presentations



540+ Prototype submissions

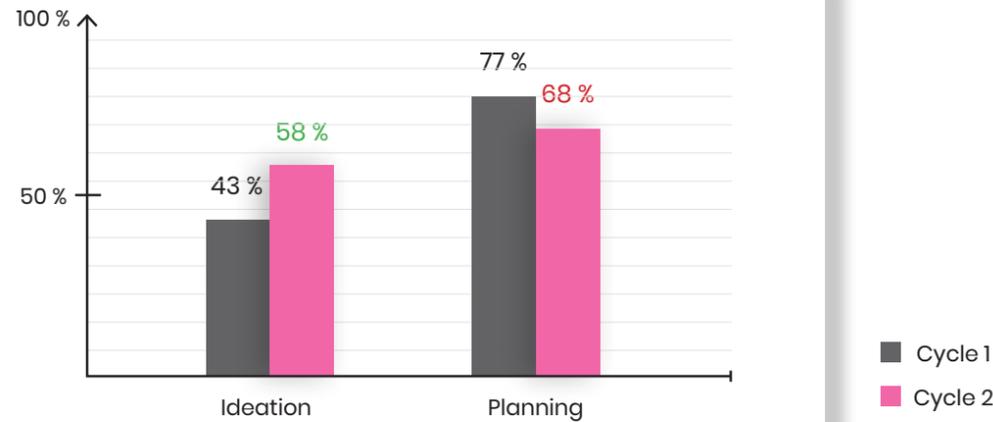


3000+ Ideas for real world
problems

Outcome



Design Thinking:



Ideation & Brainstorming

Numbers: Growth in Idea Quality.

Observation: All sample teams brainstormed ideas for diverse problem settings and users.

FGD: Close to 80% of students showed readiness to share school problems.

FGD: ~60% of groups called out and supported each other to call out systemic and social issues in school.

Planning for Making

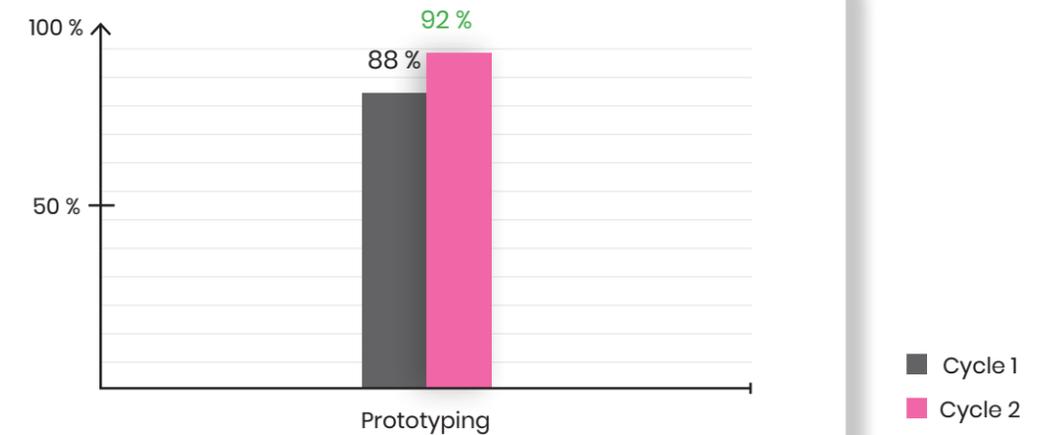
Numbers: Decrease in Planning Quality.

Observation: All teams visually represented their solutions before prototyping, evidenced.

FGD: Students relying on Verbal Planning more than Written/Visual Plan.

FGD: 90% of groups did not initiate planning for solving unless nudged.

Prototyping:



Prototyping Analysis

Numbers: Growth in Prototype Completion.

Photo Analysis:

- Sufficient evidence to show student’s understanding to create strong structures.
- Comfort and confidence to use tools, materials and electronics.
- No gender differences observed in prototyping skill.





Risk Taking:



- FGD:** ~80% sample students discussed on school problems.
- FGD:** ~25% sample highlighted systemic issues in school.
- Interview:** Academically weak students showed a growth in confidence and greater acceptance in classroom.
- Inference:** Program has provided a space for academically weak and less vocal students to express themselves - given them visibility and appreciation.
- Inference:** Open environment enables students in thinking of ideas with more risk.

Team Work:



- Observation:** Varying form of team management styles were adopted.
- Observation:** Participation of all members most in making and lesser in other classes.
- FGD:** In all groups, members supported each other when discussing systemic and social issues.
- FGD:** Division of work was naturally adopted.
- Inference:** Program built a safe space within teams and class for students to share and work on ideas.
- Inference:** Program was limited to address team dynamics, it only provided a continuous platform.

* Data from FGDs (with sample students in 4 schools)



Leadership

Interviews

Growth in confidence reported by **all sample Student Teachers**.

Interviews

Ownership & Leadership characteristics reported by sample teachers.

- Dedication levels and ownership has increased. They are dedicatedly completing inqui-lab work and other work as well. One goes to every students group and ensures they are working well.

Observations

Student-teachers took various personal initiatives to ensure program delivery to class students.



Mentoring

All sample student-teachers were reported mentoring student teams.

Observations

12 out of 15 sample student teachers spent time with individual teams to give feedback.

9 out of 15 student-teachers claiming to find it easier to explain concepts to slow learners in class.

*Sample size = 15 out of 60 Student-Teachers



Management

Observation

13 out of 15 Student-Teachers used various strategies for time management.

Student-Teachers used a mix of classroom behaviour strategies.

Inference

Student-Teachers have shown the capacity to manage resources (material, time, and human).

Inference

Student-teachers were found to have their own classroom management styles.

Student - Teachers

Kiran, TSW Chilkur

LEADERSHIP



Kiran is commanding

says his teacher, who has seen him manage the whole class effectively, even handling material shortages and giving clear time-checks. Kiran conducts and manages classes on time with effective instruction.

Shivani, TSW Narsingi

MENTORING



*I can understand students,
especially their needs.
I can now judge activities to capture
their interest.*

Shivani is an excellent mentor, quickly evaluating the needs of the class and providing timely inputs to keep teams engaged. With tremendous attention to detail, her preparedness allows her to be a confident and effective leader who has grown in her own capacity, saying her 'grasping power' has greatly benefitted.

Hari Priya, TSW Maheshwaram

MANAGEMENT



*Did not think I could teach... now, even
brighter students are asking me questions.
When they call us Student-Teachers,
it makes us feel special*

From disinterested to motivated, student participation and engagement have made Haripriya a strongly driven and confident student-teacher. She has showcased exceptional management skills, even mentoring teams individually and thoughtfully selecting ideas. From conflict resolution to leading initiatives such as Creative Wall, Reflection, and Consequence Systems, Haripriya is a force to reckon.



Though some of our students are academically weak, they're constantly growing as aspiring **Future Learners**.

Risk Taking, Confidence and Inclusion

- All academically weak students in sample showed varying levels of growth in confidence.
- Some sample students were reported to have increased confidence outside the Innovation Program environment.

*We were arguing while giving **ideas**.
Because she wanted to give and I wanted to give.*

Design Thinking

- All sample students showed an inclination to brainstorm ideas.

*Earlier people called me **world peace** because I was silent all the time in class. Now even in Math class they call me **wild piece***

Prototyping and Hands-On Activities

- Students showed greater engagement with activities that involve Making over Planning.

*In other subjects they only show videos, here there is a **hands-on** experience of solar and sensors.*

*Sample size = 8 Future Learners

Future Learners



INQUI-LAB
FOUNDATION

P Pravalika, TSW Amangal

Risk Taking, Confidence and Inclusion



When my ideas got selected, it made me feel like even I am a talented person. And that I can do better even if I am not good at studies

Wild Piece, formerly called World Peace, was a quiet girl who has utilised the program to express her thoughts, be it her ideas, interest in agriculture, or prototyping suggestions. Her team once gave excess ideas, even used extra paper to sketch them. Her teacher sees her being vocal in other subject classes also. Pravalika has gained confidence in herself, saying she can do well even if she does not study well.

Sussana, TSW Narsingi

Design Thinking



All subjects have exams, this subject has thinking. I am able to think differently, especially on how to solve problems.

'Extremely introverted', students and teachers would remark about Sussana. While that may be, she has found the platform provided by Inqui-Lab helpful in exploring prototyping, confidently communicating her ideas, even going to the extent of speaking in front of a camera! Her commitment and attraction to think differently and solve problems reflects in her repeated attempts to solve hyperlocal problems and putting in extra hours to prepare to showcase her ideas.

G Praveen, TSW Chilkur

Prototyping



Practical work makes praveen participate well with interest. We were also surprised by quality of prototypes

As a more confident student, Praveen has become an active participant in his team, constantly giving ideas inside and outside Inqui-Lab classes, even suggesting prototyping tweaks resulting in high quality models. He responds well to the program, but still needs constant motivation to study more theoretical subjects. Despite this, he is quick to grasp and looks forward to hands-on experiences that let him think about solving problems outside.



Creative Confidence
as design thinking, prototyping & risk taking

- Students having a greater willingness to identify problems they want to solve.
- During Prototyping, courage to act on their ideas indicates deliberate creative confidence.



Empathy

- Students want to solve diverse range of problems, showing concern for different sets of users.
- Program needs to cater to build other aspects of empathy like knowing the problem deeper, feeling the problem and responding compassionately.



Collaboration

- Platform for students to engage in a coordinated effort through the course of the program to solve problems together Collaboratively.
- However, since there was no curriculum focus on collaboration, rather just an expectation, there were varying team dynamics.



Student-Teacher model

- Model's success was greatly determined by amount of initial support.
- Good platform for developing Leadership & Management skills for student teachers.



Program model

- **Continuous Engagement:** Reaffirms our faith that such programs need weekly intervention.
- **Invested Stakeholders:** Collaboration with an invested partner and facilitator has largely driven the sufficiently effective implementation.



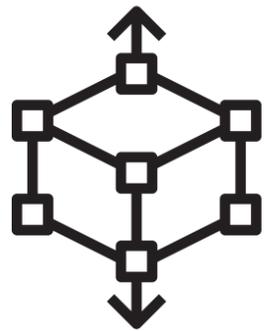
Program

- Redesign of aspects of program such as better collection of student's reflections and greater engagement for Planning are recommended.

LOOKING AHEAD



Our Approach



Develop a model that is easy to integrate into public schools



Build capacity within the system through partnerships



Incentivise all stakeholders

Develop a model for public schools

INTINTA STUDENT INNOVATOR



Promote Innovation
in schools



Support via Mentorship
and infrastructure



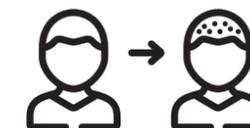
Identify and Nurture
Young Innovators



To Build a community
of Innovators



Increasing Interaction



Bridging Capacity Gap



Building Competence



Budget

Cost per student (in INR)	Year 1	Year 2	Year 3	Year 4	Year 5
With Inqui-Lab Foundation supporting Implementation & Training	1250	1000	775	500	350
With Government ownership at Scale	725	575	350	250	175

Support Us



**INQUI-LAB
FOUNDATION**

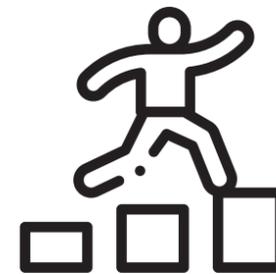
Thank you !



School & Org Funding



**Program & M&E
Collaborations**



Student Opportunities



**Core Team Capacity
Building**

School kit – Material & Tool list



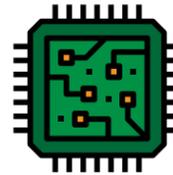
INQUI-LAB
FOUNDATION



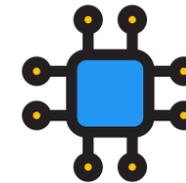
- Solar Panel-9v
- Rechargeable battery + Snap



- Program training
- Facilitator-handbook
- Student innovation work book
- Student Portfolio
- Data & reporting
- Incentives
- Program Design



- Power Block
- LED
- Motor
- Buzzer
- 2-shaft motor
- Dimmer
- Inverter
- Switch Button
- Connectors



- LDR Sensor
- Touch Sensor
- Water Sensor
- Sound Sensor
- IR Sensor
- Heat Sensor



- Hand drill
- Scissors
- Cutters mini
- Hammer
- Mini Hand saw
- Screw driver set
- Chisel set
- File & Chisel set
- Plier set