



TEACH TO LEARN

1Lab-1School Model

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Teach To Learn’s 1Lab – 1 School Model



Preface

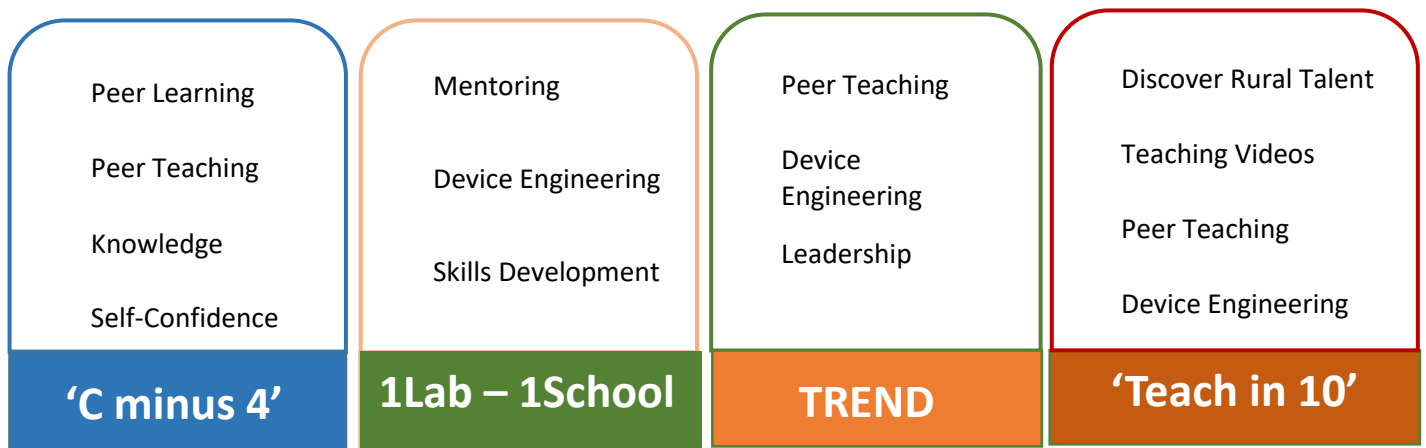
This document provides basic information about Teach To Learn’s 1Lab – 1School Model. For further information and if interested to partner/collaborate with us, please contact us at the number or write to us in the email provided at the end of this page

Acknowledgement

We sincerely thank the Education Department of Tamilnadu (Samagra Shiksha Abhiyan aka SSA) for encouraging our initiatives. Thanks to the school authorities and the students for participating in our programs. We also appreciate the contribution from the labs of IIT Madras. Advisors believed in our model and permitted their students to volunteer. These Graduate Students are the primary mentors in all our projects and contribute greatly in building content, teaching, training and mentoring the rural school children. We would like to acknowledge the contribution of our funding partners, IITM SRP, TechnipFMC, Verizon India Ltd, NCSTC_DST; and Implementation partner SRF for their support.

About Teach To Learn

Teach To Learn is an initiative started by Dr. Pijush Ghosh from the Department of Applied Mechanics, with an aim of strengthening the relationship between the premier higher education institutions and the grass root level schools across India. Through the different Mentoring Models, Teach To Learn’s vision is to develop the culture of 'Mentoring' and make 'Hands-on Learning' part of school education. Our models use *Peer Teaching - Peer Learning* as the primary mechanism to achieve this. Through these models the youth energy (graduate students) which is the strongest resource in premier institutions like IITM can tap in to rural talents and help develop scientific thinking skills. The key components of the 4 models are listed below.



Details about the initiative is available in www.teachtolearn.co.in

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The '1Lab-1School' Model

About the 1Lab – 1School Model

'1 Lab -1 School' is a mentoring program that connects the graduate laboratories (labs) of premium institutes to the rural high schools. Graduate students from these labs mentor high school students through a structured mechanism covering major aspects including scientific thinking, hands-on learning, device engineering and life skills.

Note: A Lab refers to a group of Graduate students under an advisor. This group comprises of MTech, MS, PhD scholars. Based on the strength of the implementing institution even the Under Grad students may be connected to the rural schools.

Objective

The objective of this model is to provide the students from rural areas with significant exposure to both academic as well as technical skill development. Through hands-on Training motivate the students to develop a passion towards building or making equipment and devices on their own and expose them to science learning in interesting ways.

Benefits to Mentees

- Motivation to pursue higher education.
- Relate book learning to reality.
- Gain familiarity with the engineering application and develop research culture.

Benefits to Mentors

- Opportunity to enhance their interpersonal skills.
- Enhance the sense of responsibility and duty towards society.
- Get motivated to solve social problems.
- Realize the joy of giving back to the society.

Methodology

The **two- year implementation** process is illustrated below.

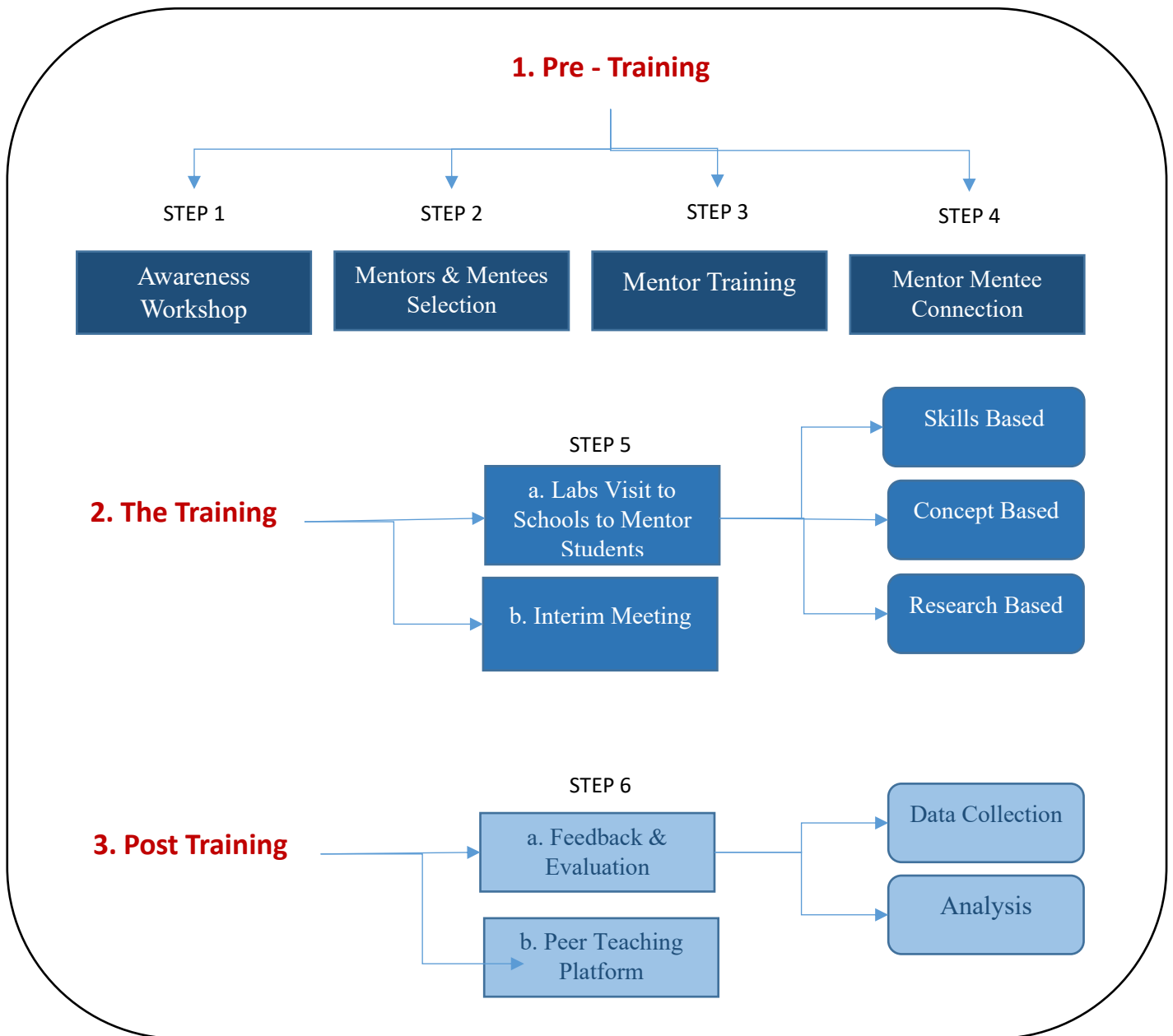


Figure 1: Methodology

The Methodology illustrated in Figure 1 is explained below



1. Pre-Training

Step 1: Awareness Workshop

The Awareness Workshop aims to bring general awareness about the model concept among the main beneficiaries of the programme. Schools and Labs are given a detailed presentation about the objectives, process of implementation, expected outcome, roles, responsibilities and other necessary details.

Step 2: Mentor and Mentee Selection

Interested Graduate Students from Labs sign up to be Mentors. Based on certain criteria, schools are selected from the list of attendees from Awareness Workshop. Coordinators are assigned for each team.

Step 3: Mentor Training

Mentors are trained to teach and mentor school students in Device Engineering and Technical Skills. This training has two parts - a) Understanding the content, b) Techniques of teaching and training.

Step 4: Mentor & Mentee Connection

During the Connection meeting, the Labs and Schools are officially connected where each lab is introduced to the school which they will be visiting during the implementation period. A particular Lab visits only its connected school throughout the two-year period. The connection meeting is organised to give a chance for the Labs and schools to understand the process and the expectations from each other. After this meeting, a screening test is conducted for the school students to select the participants of the program.

2. The Training

Step 5a: Labs Visit to the Schools

The Coordinator teacher from the school and the Coordinator of the Lab fix the schedules based on mutual convenience and availability. Mentors visit the connected school and spend a day teaching, training and mentoring the selected school students.

The Core Mentoring areas are:

- A. Skills Based Training – Training to develop scientific thinking skills and the motivation to build from scratch are the primary objectives of this training. It involves teaching the Mentees the science behind everyday devices such as bicycle bell, Dynamo, Weighing Scale, Vacuum Cleaner etc. Each visit focuses on any one device, demonstrating the working principle and mechanism of devices and guiding the students to dismantle and assemble the device to get hands-on experience.
- B. Concept Based Training - Teaching the science behind everyday things gets the students excited about the scientific facts behind daily events and observations. They cover a set of “Tell Me Why” questions



Teach To Learn's 1Lab – 1 School Model



primarily through interactive animations (PPT) and basic hands-on demonstrations/activities. Some sample questions are: ‘Why does milk rise when boiled?’, ‘Why is the sky blue?’, ‘Why does popcorn pop?’, ‘Why do onions make us cry?’.

- C. Research Based Presentation - The objective of this is to expose the students to the idea of research, motivate and excite them to think out of the box.

Step 5b: Interim Meeting

A meeting is organised by the Implementation Partner for the school Headmaster, Coordinator Teacher and the Mentors from all participating Labs. The purpose of the meeting is to review progress and iron out any issues. This meeting is a good time to discuss further plans and collect input related to the effectiveness of the implementation thus far.

3. Post Training

Step 6a: Evaluation & Analysis

- a) Data Collection - Pre- and Post-Test Scores and Feedback responses are collected from the students regularly using questionnaires and surveys. Feedback is also collected from the Mentors and Teachers.
- b) Analysis – This step involves statistically analyzing the collected data for preparing reports, writing research paper and for refining the implementation process.

Step 6b: Peer Teaching Platform

It is very important to provide a platform for the participating school students to demonstrate and share their learning. The Teacher and Headmaster organise a demonstration event in a neighbouring school and/or in the same school for the students to put up stalls and demonstrate their learning.

Note: This can be done at the end of each academic year or once at the end of the implementation period.

Our Implementations from June 2018 – March 2020

The 1Lab – 1 School project was fully funded and supported by Verizon India Limited and primarily implemented in Tamilnadu across 3 Districts - Kanchipuram, Vellore and Tiruvallur. Over 800 high school students from 20 rural government schools participated and from IIT Madras, over 150 Graduate students from 20 Labs volunteered for this implementation.

Awareness Workshop & Connection Meeting



School Visits and Mentoring

