

Vigyan Ashram Status Report

Volume 42 Issue 11

November 2025

In this issue

- **Inauguration of STEM & Vocational Education Program**
- **Installation of Solar Street Lamps and EV bike training kit**
- **Teachers training program @ Ranchi**
- **DIC team made rice thresher based on IBT project idea**

A] Inauguration of STEM & Vocational education program:

Eaton India Foundation is supporting STEM and Vocational Education program as per NEP 2020 in 13 schools in Pune Metropolitan Region. The formal inauguration of the program was done at the hands of Shri. Pradeep Kumar SK (Managing Director and Country Head - Eaton India) and Mrs. Aruna Yadav (Assistant Director, SCERT) on 25th Nov at JP Naik Centre, Pune. We have started the activities in schools since Aug 2025. On this occasion, we organised a small exhibition of the program. Students from 9 school exhibited 25 + projects in three forms of work (Life form, Machines & Material, Human Services). A small orientation workshop was also organised for volunteers from Eaton India Pvt. Ltd. We are very thankful to all little chaps for the lovely projects, school administrators and Eaton India Foundation CSR team for their support and encouragement for the program. Mr. Pradeep SK and Eaton India Foundation team also visited DIY Lab, Pune to learn more about the work being done at the DIY Lab, which is funded by the Eaton India Foundation.



B] Installation of Solar Street Lamps and EV bike training kit:

Vigyan Ashram in collaboration with the Department of Artificial Intelligence & Data Science of All India Shri Shivaji Memorial Society's Institute of Information Technology (AISSMS, Pune) installed 24 units of 'Solar Street Lamps' in Pabal village. These lamps are made by students of AISSMS college with an auto-fault detection system for battery, LDR sensor and LED failure. DBRT electrical section students worked with college students to identify places for installation of lights in Pabal village including marketplace, temples in nearby hamlets, crematorium etc. Similarly, an electrical-bike training & demonstration kit developed by AISSMS students was also installed at Pabal campus.



C] STEM Teachers training program @ Ranchi (STARS Forum):

A comprehensive three-day residential STEM training programme was organised at JCERT, Ranchi in four batches. Science and mathematics teachers of Kasturba Gandhi Balika Vidyalayas (KGBVs) and Jharkhand Balika Awasiye Vidyalayas (JBAVs) across seven districts of Jharkhand participated in the training.

1st Training: 6-8th Nov (Ranchi, West Singhbhum, East Singhbhum) – 52 teachers

2nd Training – 11th 13th Nov (Khunti, Giridih, Jamtara, Dumka) – 41 teachers

3rd Training - 17th to 19th Nov (Ranchi, West Singhbhum, East Singhbhum) – 47 teachers

4th training - 20th to 22nd Nov (Khunti, Giridih, Jamtara, Dumka)



Inauguration of the STEM lab established at JCERT was done on 6th Nov. The programme was graced by Ms. Anupa Kumari (JEPC Ranchi), Dr. Nilam Kumari (JCERT Ranchi), Ms. Joshila Ekka (UNICEF Ranchi), and Mr. Ranajeet Shanbhag (STARS Forum).

D] DIC team made rice thresher based on IBT project idea

DIC Team worked on IBT students project idea of making rice thresher: Abhijit completed fabrication of motorized 'rice thresher' for Vahangaon IBT school. Students of 9th class developed a manual rice-thresher as school project. School wanted to convert it into motorized version for local farmer. DIC team designed a completely new machine along with motor torque calculation & delivered to school on 24th November.



E] DBRT students picnic to science tech park and Katraj Zoo

DBRT students went for one-day trip to Pune on 7th November. They visited science tech park, Katraj Zoo and snake park, Shanivarwada etc. Students enjoyed metro travel for the first time. Students purchased material from the electronics market. Mr. Prakash Shah, principal of Aran Vidyut school, guided students on how to speak and work in business and taking contracts. After that, students purchased electrical tools and gained experience of market and shopping.



F] Technology development & Design Innovation Centre (DIC) updates:

DST-SUNIL project updates:

Polyhouse climate control & pest prediction system:

- Pranit and Ganesh visited Pandharpur (1st November) and Sangamner (25th November) to visit polyhouse farmers for collection of weather monitoring device data and troubleshooting. We are facing some technical issues with weather monitoring devices probably due to the failure of the GSM datalogger module. The team is working on resolving this issue.
- Pranit, Sidharth & Lohit (from IIT e-yantra lab) started work on developing a farmer's mobile app for weather data monitoring & pest-prediction. During November, they worked on CORE UI design, API call and data display module. Team also collected 2000+ photos of capsicum (Thrips) pest as training data for pest-count for mobile application.



Black-Soldier-Fly (BSF) & Backyard poultry farming:

- At Rajgurunagar Municipal Council (RMC) total 34.05 metric tons (MT) of wet waste processed using Black Soldier Fly (BSF) larva to produce 382.6 kg of pupae and 55.369 kg of pre-pupae. In the breeding chamber 1364 gm BSF eggs were produced, and 32.3 kg larvae were dried for oil extraction experiment.
- Shreyas is working on automation of BSF breeding chamber. He has completed thermodynamics calculation and installed a LED lamp (combination of blue, green and UV frequency) in breeding chamber.
- On 16th November, Mahesh & Dr.Arun dixit conducted meeting with Sarpanch and Gramsevak of Savardari village near Chakan (Tal- Haveli, Pune) for implementation of BSF based waste processing unit.

Solar Dryer for red chili:

- Prasad Patil and Ganesh Pingale visited the Samaj Pragati Sahyog (Dewas,MP) and Narmadalaya (Lepa Punarvas, Khargaoan,MP) from 18th – 20th Nov for meeting chili farmers. They met Farmers Producer Organization (FPO) members and individual farmers to understand present difficulties in chili-farming & drying.
- Harshad conducted multiple trials of solar dome dryer with wild-grass biomass. This is on requirement of The 14 Trees Foundation. They wanted to dry wild-grass (from Sahyadri forest ranges) for bio-diversity study. Total 27 samples were dried to remove 12 to 85 % moisture using solar dome and solar inclined dryer.



Other technology development project updates:

- Sayali and Jyotsna conducted training demonstration of LI-COR 6800 photosynthesis analyser at 'Sahyadri Farms' Nasik during 10th to 13th November. The photosynthesis analyser is temporarily shifted 'Sahyadri Farms' for recording photosynthesis efficiency of grape crop. Sayali and Sun-Seed team provided training to farm managers (Mr. Aditya & Dr. Ramakant) on installation, calibration and data recording.

- Harshad tested prototype (50 kg capacity) of ‘smart onion storage’ for air-flow patterns, position of exhaust fan and fan speed. He found that forced air circulation from bottom of the storage unit is most efficient as compared to top mounted exhaust fan. He is working on design & fabrication of working prototype and consulting with IIT e-yantra lab, team from sensor-based automation system.
- Dnyaneshwari conducted trials on standardization of ‘carrot pickle’ using 3 methods: Traditional Indian, Kimchi and pre-dry pickling method. In traditional method raw carrot marinated with spices, whereas in Kimchi method they are first soaked in salt water for drying and in pre-drying method carrots are oven dried before pickling. She found Kimchi method most accepted for colour, taste and texture. She also worked on designing ‘Modak pre-mix’ recipe.
- Sayali completed trials of algae deposition removal on evaporative pads in polyhouse. She found that with the treatment of bleaching powder (Calcium Hydroxide $\text{Ca}(\text{OCl})_2$), algae growth can be controlled with improved airflows of 24.68 % (as compared to 6.36 % in control treatment).
- Jyotsna & Sayali tested a P&G Purifier (<https://csdw.org/>) for its application in clarifying and/or nitrifying contaminated drinking water. The liquid coagulant agent worked very well for dirty water with suspended particles whereas for grey water it did not work very efficiently. Team also prepared 300 H_2S strip testing bottles and distributed 3 lit agro-waste composting culture.
- Aditya & Sujay (BTech) completed 4 months internship. Aditya Dudhane also completed his 6 months fellowship program. Iouri Loup, an intern (EPFL – Swiss Federal Institute of Technology, Lausanne, Switzerland) completed his two-and-a-half-month DIC internship. Mr. Yashwant Prasad (PhD, Mechanical Engineering, IIT Delhi) and Mrs. Aparna Kulkarni (working professor department of Electronics, Rajgurunagar) and Ms Payal Dhakarge (Gandhi rural fellow) joined DIC for internships. Mr Deepanshu Gupta (Sewa Fellow) joined for one year fellowship with Vigyan Ashram.



TAP-RISE project updates:

- On 9th November a webinar was conducted for promotion of ‘Natural Convection Dryer Technology’ especially useful for coastal region. Webinar was attended by 38 participants. Dr. Raghu Ram Das from Mitraniketana (Trivandrum, Kerala) conducted the training.
- Vigyan Ashram has successfully developed a micro-propagation (Tissue culture) protocol for Aglaonema plant. It’s one of the important ‘Araceae’ family ornamental plant difficult to mass produce with traditional propagation methods. Under TAP-RISE project, we got a technical & skills training support to learn tissue culture technology from Vivekanand Institute of Biotechnology (VIB, West-Bengal).
- A first draft of patent application for ‘Black Soldier Fly’ (BSF) breeding chamber is finalized with the help of IPNeeti. TAP-RISE team is helping us in documentation & filling of patent application for innovative climate control system in BSF breeding chamber.



F] Diploma in Basic Rural Technology (DBRT) course updates:



DBRT students started their post-Diwali sessions in the November month. Apart from regular training sessions, students also participated in sports and extra-curriculum activities. Some of the highlighted activities are-

- three DBRT & one DIC student with 2 staff members participated in the 'Run for Unity' marathon on 2nd November. Dnyaneshwar secured 2nd rank in 5 km, while Harshad completed 10 km in 55 min.

- A Volleyball Premier League (VBPL) among DBRT students team was conducted on campus as sport activity during 16th to 30th November.

Section wise highlights -

Workshop section: Students fabricated IBT schools' furniture set. They also started plumbing work for new-hostel building. Students learnt sliding-window fabrication while repairing a window in ladies-hostel and started fabrication of 20 units of hostel bed. Total value

of their community service was Rs. 1,23,243/- including labour charges of Rs. 15,101/-.

Energy & Environment section: Students installed 20 solar street lamps in Pabal village. They also done earthing to newly constructed tiny house near ladies hostel. They learnt servicing home-appliances while repairing a weighing balance, installation water-filter. Total value of their community service work is Rs.19,660/- including Rs.4,050/- labour charges.

Home & Health section: Students of Home & Health section, dried 6 types of medicinal herbs received from Kalubai Vandhan Kendra (Junnar). Total 94.36 Kg



of medical herbs were dried by students using solar & electrical dryer to produce 39.12 kg powder. Students also prepared 12 kg moringa chickki, 5 kg Tamarind sauce and processed 31 kg bread flour during regular production schedule. Seven girl students started 'Beauty & Wellness' training. They will be learning basics of hair spa, face cleanup, facial, hair cutting etc.

Agriculture & animal husbandry section: In farming section, students planted fodder maize crop on 10 guntha by using seed-drill. They learnt plant propagation by using stem cutting, air-laying & budding method for preparing 150 rose plants, 10 lime and mulberry plants. Students harvested 41 kg capsicum from polyhouse (11kg supplied to kitchen & 30 kg sold in market) and 9 kg spinach from hydroponics system. They also worked in soil testing & tissue culture laboratories.

Fab-lab & computer section: Students learnt installation of P10 LED display in Kitchen for displaying daily food wastes.



Makeathon: A Make-a-thon was conducted for students of Sangamner College from 17th to 22nd Nov. Sixteen students received hands-on exposure to innovation, design, and basic electronics.

G] School based vocational program updates:

i) Teachers training @ Pabal: Vocational teachers training for schools in Gujarat was conducted at Pabal from 3rd to 7th November 2025. Total 12 vocational instructors attended the training. The program is supported by Schaeffler and implemented by NGO CSR Box with Vigyan Ashram as the technical partner. Training covered project making in three forms of work: Life Form, Machine & Material, and Human Services (STARS Forum).

ii) Teachers training @ Jawala Bazar Dist Hingoli: Training program for school teachers was conducted from 7th to 10th November at Jawla Bazar, Dist. Hingoli. 12 instructors from 5 schools attended training program (VATF).

iii) School co-ordinator training @ Pabal on 21st and 22nd November: 9 instructors from 4 schools attended the training. This is orientation program for implementing Vocational Education program from Grade 6 as per NEP2020 (Stars forum).

iv) **Learning By Doing (LBD) (Uttar-Pradesh):** UP team conducted Master trainer's refresher training from 31st Oct to 2nd Nov at Lucknow. Training program for teachers from new LBD school has started from 3rd Nov. Following are the details:



Sr No.	Dates	Number of participants	School District
1	3 to 5 Nov	79	Azamgarh
2	6 to 8 Nov	105	Balia, Saharanpur
3	10 to 12 Nov	100	Bulandshar, Chandauli
4	13 to 15 Nov	96	Kheeri
5	17 to 19 Nov	97	Bahraich, Baghpat
6	20 to 22 Nov	74	Mahoba, Sitapur
7	2 to 27 Nov	87	Auraiya, Prayagraj
8	28 to 30 Nov	77	Hardoi, Hapur

H] Entrepreneurship Development Program (EDP) update (VATF):

Training workshop on Plant Nursery: A two-day training on "Plant Nursery Management" as an enterprise, was conducted at Pabal campus on November 29th and 30th. Participants learnt hands-on skills in raising vegetable seedlings, air-laying and grafting fruit trees (mango, guava, pomegranate), tray management, propagating ornamental plants, and preparing grow bags. Library. Participants also worked in the Plant Tissue Culture (PTC) laboratory and visited a local nursery entrepreneur. A total of 11 budding entrepreneurs (9 Schaeffler India (CSR)-supported IBT school instructors and 2 individuals) attended training workshop.

Training need assessment (TNA):

Ganesh visited Kokankhed, Daregaon and Nimon village in Chandwad block of Nasik district on 12th & 13th November to conduct a Training Need Assessment (TNA) survey in association with RAH Foundation. He conducted meetings with Women Self Help Group (WSHG) members, farmers and youth in the village to map

resources (raw material), skills requirements and aspirations of the community. He identified scope for local entrepreneurship & guided local community for technology adoption.

Hero of the month: Mr. Saurabh Jadhav completed his training in the Energy & Environment Department at Vigyan Ashram during 2020–21. After completing his internship in Pabal village, he started his own business named “**Shri Ganesh Electrical**” in October 2025 at Pabal.

I] Atal Tinkering Lab (ATL) & DIY lab update:

ATL Lab updates:

Following online sessions were conducted for ATLs.



No.	Date	Topic	Link
Andhra Pradesh			
01.	04/11/2025	Sound Can Dance – A Laser Light Sound Vibration Experiment	Click Here
02.	18/11/2025	Making a DIY Model to Learn Types of Quadrilaterals through Paper Electronics	Click Here
Telangana			
03.	12/11/2025	Sound Can Dance – A Laser Light Sound Vibration Experiment	Click here
04.	26/11/2025	Orientation of ATL Handbooks designed by Vigyan Ashram	Yet to upload
Karnataka			
05.	07/11/2025	Solar Powered RC Car	Click here
06.	21/11/2025	Windmill- A source of Renewable Energy	Click here
07.	28/11/2025	Orientation of ATL Handbooks designed by Vigyan Ashram	Click here

DIY Lab updates:

. Following activities were conducted at DIY Lab during November. Making your own resin art clock. https://youtu.be/FfCC6_0Yxas. Python Programming and game making. <https://youtu.be/cqHDCpvDb4U>

J] Other titbits:

- i. Prasad & Abhijeet participated in 5th All India Design Innovation Centre (DIC) meet at IIT Delhi on 3rd & 4th November. They presented work done by Vigyan Ashram as a spoke centre of SPPU while participating in review meetings & brainstorming sessions.
- ii. Sudhir & Supriya Kulkarni donated automatic cleaning mop (robotic cleaner) and air-purifier to worth Rs.39000/-. We are very thankful to them for in-kind donations, it will be used in tissue-cultural laboratory to improve lab hygiene.
- iii. Dr. Yogesh Kulkarni attending Editorial board meeting of Grade 9 book on vocational Education at PSSCIVE, Bhopal from 17th – 20th Nov. He also attended Text book development team meeting for Grade 11 on vocational education at PSSCIVE, Bhopal on 28th – 29th Nov.
- iv. Dr. Yogesh Kulkarni attended Ecoversities Planetary Gathering 2025 held in Thailand (7-12 November). It was held at Maa Ubang Agriculture Research Center, Thailand. It was good opportunity to interact with over 100 participants from 25 different countries.
- v. There are 3 additions to animal husbandry section, a calf, a buckling (male goat) and a doe (female goat).

- vi. Weather record – Rainfall of the month – 00 mm (Total: 793.87 mm), Max temp-32.00° C, Min Temp –9.00° C, Humidity –58%, Water height in well– 3.55 m, Waste-water COD- Boys hostel- 140 ppm, Girls hostel- 270 ppm (slightly high)
- vii. Energy consumption record- Electricity unit – III Phase- 761 units, I Phase import- 1072 units, solar export III Phase – 439 units, Solar export I Phase- 243 units, Solar generation (off-grid)-87 units, DG used – 02:30 Hrs, Biogas- 44 m³ (880 kg dung used)
- viii. Animal Husbandry section update – Milk production –330 Kg (Profit Rs: 440.00), Goat farm – 2 new goad kid added in stock (daily weight gain of 70-90 gm recorded)
- ix. Online visitors: www.vigyanashram.com –2397 (Organic-1109, Other-1288), Pabal campus visitors: 232



Yogesh made 'Ready to Eat Gajara Halva' at Bangkok

JJ Data Report: <https://shorturl.at/2Bilz>

(Work at Vigyan Ashram is supported by: Asha for Education, Praj Foundation, EATON Foundation, LTI-Mindtree, SPA Education Foundation, UNICEF, TATA Technologies Pvt. Ltd, MAHLE Engineering Services Pvt. Ltd, Schaeffler India, Texol Engineering Pvt Ltd, INDUSA Endowment, Savitribai Phule Pune University, Dept. of Science & Technology, La-Foundation, The Prabhu Trust, STARS Forum and many individuals and foundations).

Photo Gallery:



Eton team Visit to DIY lab



Hands on activities during STEM education program



DIC meet at Delhi



Display made for kitchen waste



Yogesh Kulkarni with Maneesh Jain at Maa Ubang
Agriculture Research Centre



Experiments with Gajar Pickle

For Regular update: www.facebook.com/vigyan.ashram.pabal ; www.vigyanashram.blog
www.vigyanashram.com ; <https://vigyanashram.online/>