Vigyan Ashram Status Report

Volume 42 Issue 10 **October 2025**

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A] Celebrating festival of light & prosperity

October was the month of festivals and celebration. Along with skills training & research project work, students & staff at Vigyan Ashram celebrated these festivals with joy & learning. Following are some of the highlights of our Celebrations –

Dussehra was celebrated at Pabal campus & DIY lab Pune with Auyodh Pooja (Worshiping tools & equipment) as symbol of livelihood & prosperity on 2nd October.

DIY Lab conducted hands-on learning workshop for senior citizens from Tapas Elder care (Pune) on 10th Oct. The workshop was attended by 40 senior citizens. https://youtu.be/Y-prz0pxBQ8.

Kojagiri Poornima was celebrated at the Pabal campus on 5th October. Students and staff participated in the celebration, which included Antakshari, songs, and dance during the evening. The program concluded with refreshments, including boiled milk and snacks.



DBRT students had Diwali holidays from 18th to 26th Oct. But 13 students preferred to stay back on the campus. Few staff stayed back with them to take care of essential service. They celebrated Diwali on campus. It starts with worshipping cows (vasu-baras), Laxmi poojan. Kitchen staff prepared sweets and festival menu during Diwali.

B] Faculty Development Program (FDP):

An FDP for college faculties was organised from 13th – 17th Jan in collaboration with MSFDA (Maharashtra State Faculty Development Academy). Total 18 faculties from different institutions across Maharashtra participated in the training. Participants were introduced with implementation of design-thinking methodology and entrepreneurship aptitude with college students. (VATF)



C] Refresher teachers training at Lucknow

Refresher teachers training for 'Learning by doing' program was conducted at Lucknow. Total 587 teachers from 20 district of UP were trained for 2 days in 6 batches in the Oct.



D] Asmita lab updates

Asmita Lab successfully completed the production and delivery of 60 kitchen aprons along with matching head caps.

Asmita ladies are learning Inkscape software to print Logos on the T shirts, caps etc. Two ladies learnt this software and could print logo on T shirt and completed order of 4 T-shirts.

Asmita ladies participated in an exhibition organised by Persistent at Kothrud and Hinjewadi location at Pune. They sold products of Rs. 3,400/- in the exhibition.

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

DST-SUNIL project updates:

Developing a solar dome dryer:

- A two-day training workshop on opportunities in 'Solar drying-based enterprises' was conducted at Pabal campus during 4th & 5th October. Participants learnt to use solar dome dryer & solar flat-bed dryer for drying of vegetables, fruits, medicinal herbs and ready-mix recipes. Participants used these dryers for drying raw vegetables & innovative ready-to-cook recipes like gajar halwa, sabaji-mix etc. A field visit to a successful drying enterprise was also organized for 10 participants.

- Harshad visited Shri Vithalrao Joshi Walawalkar Trust (SVJWT) in Dervan (Chiplun, Ratnagiri) to conduct a 2-day training on drying protocol standardization. Training was attended by 5 staff members of the institute while learning the concepts like Loss of Drying (LOD) and drying efficiency calculation. During the experiment electrical dryer efficiency was found very low (11.7 %) with very high drying cost (Rs.43.05/kg). Harshad suggested required changes in electrical dryer design & solar tunnel dryer. (VATF)

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

- 33.25 metric tons (MT) of wet waste was processed at Rajgurunagar Municipal Council (RMC) dumping yard by Mahesh in the month of October. Black Soldier Fly (BSF) larvae were used to produce 391.5 kg of pupae. These pupas were used for breeding (320 kg) and drying (71 kg). The dried pupas will be used for experimentation on oil-extraction and poultry feed formulation.
- Iouri Loup (EPFL, Switzerland) intern and Harshad started work on designing a BSF larvae dryer. The BSF larvae required to be dried for further processing (animal feed preparation). The conventional dryer is not suitable for BSF larvae as it contains oil (30-35%) and water (50%). The Vibro-Thermal-Dryer (VTD) with biomass gasifier-based heat-exchanger is designed for this purpose. The calculations showed a gasifier with heat-exchange capacity of 113 MJ for 50 min (air-flow rate 666 m^3/h) will be enough for drying 88 kg BSF larvae. The team has started work on developing a prototype (5 kg capacity) using 500 W electric heaters and a 100 CFM fan. The drying trays will have four springs (each 2,046 N/m stiffness & 10 kg maximum load capacity) with vibration frequency of 4.55 Hz.
- Shreyas started an experiment on developing 'BSF breeding chamber light'. BSF needs a combination of green, blue and UV light intensity for effective breeding. Shreeyas developing a PCB circuit with buck-converter constant-current driver for high efficiency, low ripple, and thermal stability. He is using LED strips of Blue (450-470 nm), Green (520-550 nm) and UV light frequency.

Polyhouse climate control & pest prediction system: As a part of developing an Image Recognition (IR) and Artificial Intelligence (AI) based 'pest detection system' in polyhouse farming, Jyotsna captured 352 photos of 'Thrips' infected capsicum plants in Polyhouse. So far, the team has collected more than 4000 photos as training data. This training data will be used for developing mobile app for identification of pests, counting its intensity and suggestion of control measure.

Other technology development projects:

Onion storage: We are working on the development of 'design & development of 1 MT onion storage unit' project under financial support of La-Foundation (Dassault Systems). Harshad & Prasad have completed base-line study with farmers. Based on the feedback, a circular shape prototype (miniature) storage unit with 3 kg loading is developed to study air-flow patterns of storage structure. Harshad collected data on different airflow (CFM) Vs distribution pattern, suction Vs forced air ventilation, height Vs diameter of structure etc. parameters. The data will be useful in the design of a working prototype.

Electrical conductivity (EC) of hydroponics: Sayali started a field experiment for deciding optimum EC for hydroponics system (spinach crop). She fabricated Nutrient Film Technique (NFT) hydroponics structures for testing the effect of fertilizer doses with three EC ranges (1.7 to 1.8 mS/cm, 2.0 to 2.1 mS/cm and 2.2 to 2.3 mS/cm). During the trial, EC between 2.0 to 2.1 gave best results (healthy growth, no-deficiency systems and highest LOD of 89.78%).

In the microbiology lab, the team completed an order for 2000 units of H_2S strip bottlers. The team also tested 1 soil and 2 water samples for farmers.

Sujay developed moringa bites with split green gram, sprouted Bengal gram and pearl millet. After several trials, he was able to have crispy, healthy and cost effective moringa bites.

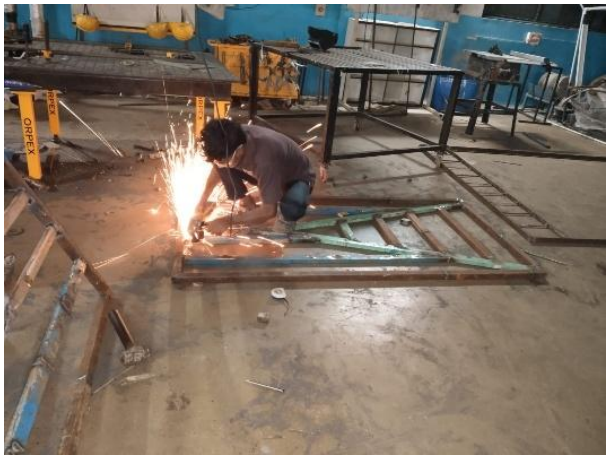
TAP-RISE project updates: Under Technology Acceleration Platform for Rural Innovation and Social Entrepreneurship (TAP-RISE) project -

- A patent filing started for BSF technology for Pratheen Eco Solutions LLP in collaboration with IP Neeti. The meeting was conducted with Dr. Shuchi Agarwal and Dr. Arun Dixit for submission of CAD drawing and patent claim document.
- Working with 'Mitraniketan' (Thiruvananthapuram, Kerala) for higher humidity region 'solar dryer' scaling-up plans and Rural Communities and IIT-Delhi for standardization of 'vertical bag' technology.

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

Agriculture & animal husbandry section:

Students in the farming section concluded 'broiler poultry' raring batch on 10th October. They sold 91 birds in the market (220 kg) at the rate of Rs. 88 / kg. They incurred a loss of Rs. 4,758/- due to lower market price and higher Feed Conversion Ratio (FCR). Students learn chick raring (brooding), feeding, vaccination etc. skills through this activity. Apart from this, students also worked in the farms to plant strawberries (80), chilli (10), brinjal (10), tomato (10) as regular farming activity and harvested 50 capsicums from polyhouse.



Workshop section: Students in the workshop section completed fabrication of 'IBT lab furniture' set including welding table, a kitchen desk with sink, electrical lab working table and an agriculture tools stand. They earned a community service of Rs. 26,706/- (including labour charges of Rs. 1,968/-). Students learnt skills in metal fabrication, painting, cost calculation etc. through this activity. Students also completed wall-painting work of a common toilet block, fabricated gate for ladies' hostel, repaired bio-gas tank and WC fittings for tiny-house project. Total value of their section community service for October was Rs. 51,142/-.

Energy & Environment section: In this section students learnt motor re-winding skills while repairing a 3 HP pump of High Throughput Pump (HPT) and 1 HP water-pump for farming section. Students completed electrical wiring work for Mr. Rahul Pingle (Pabal village) while earning a labour cost of Rs. 1,000/- (total work cost Rs. 9,000/-). Students also repaired electrical connections in the dome-house and installed 1 unit of CCTV camera in the electrical section. Total value of their community service work was Rs. 32,378/- (including labour charges of Rs. 6,274/-).

Home & Health section: In the Food processing section, students completed an order of 16 kg moringa + peanut chikki while learning sugar-syrup preservation. Students also prepared various 'Diwali-Faraal' items such as Instant Chakli Mix (6 kg), Instant Anarase Mix (4 kg), Instant Pooran Mix (4 kg), Instant Idli mix (4 kg), Shankarpali (5 kg). Students sold Diwali-Faraal in Pabal village and staff members. The total value of their community service was Rs. 21,980/-. Apart from this, students also learnt cap manufacturing and handkerchief in Asmita lab. Total value of their community service work from Asmita lab was Rs. 7,750/-.

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

Spice making enterprise training: A training on a spices manufacturing & distribution enterprise was conducted at Pabal campus during 11th & 12th October. Training was attended by 13 students. They learned hands-on skills in making different Indian spice-mixes like Goda Masala, Garam Masala, Pav Bhaji Masala, Misal Masala, Wet Masala, Mutton Masala, Tea Masala, Onion Masala etc. Entrepreneur Mrs. Ashwini Thorat and Mr. Saurabh Shinde (ex-spice entrepreneurs) were resource person.

Field visited & mentoring support:

On 25th October, Ganesh visited a 'dairy processing unit' at Nira (Tal- Baramati, Pune) for exploring collaboration opportunities for training & students' internships under EDP program.

On 30th October, Ranajeet & Ganesh visited Sattu Marade Van-Dhan Kendra (Kolhewadi) and Kalubai Van-Dhan Kendra (Taleran) in the Junnar block of Pune. The visit was for providing technical support for manufacturing & marketing of brown-rice and medicinal plants. A meeting has been organized with Samarth College of Pharmacy (Belha, Pune) for manufacturing of Ayurvedic Medicines and Cosmetics from herbs.

Vandhan kendra @ Kolhewadi

Hero's of the month:

- Mr. Yash Misaal started Sai Gulacha Chaha (साई गुळाचा चहा) a 'tea & coffee Shoppe' at Sahakar Nagar, Swargate, Pune. Yash is DBRT 2024-25 batch student.
- Mr. Saurabh Jadhav started an 'Electrical & motor re-winding' shop in Pabal village. Saurabh has done a 'Basic electrician and motor re-winding' short term

(3 months duration) course in 2022. He has completed apprenticeship training before starting own enterprise.

H] School based vocational program updates:

Introduction to Basic Technology (IBT) program

Students from Sumati Bal bhvan school arranged Diwali bajar (koushal mela) in their school on 3rd October. IBT students prepared and sold various items such as Bhel, Laddus, Chakali, Diyas, Dhoop, Chutneys, Light garlands, Bamboo stands, Bamboo mobile stands, Bamboo speakers, Pot stands, Phenyl, Soaps, and many more. Students earned profit of Rs. 4,100/- by selling the products.

Koushal Mela @ Sumati Bal Bhavan

The 3D printer instructor training was organised at Pabal campus for 12 instructors from 9 schools during 7th to 10th October. The training covered 3D designing, printing techniques, understanding sensors, and developing electronics-based projects. (Stars)

3D Printing training @ Pabal

STEM project

Our team members are regularly visiting schools in Murshidabad (West Bengal). Work of STEM manual in Bangla is in progress. We have received suggestion on language editing and work is in progress. Similarly work for Hindi STEM manual is progress for schools in Jharkhand. Team members @ Ranchi are visiting KGBV schools in Six districts to conduct activities.

STEM activities @ KGBV Tamar (JH)

STEM activities @ KGBV Angara (JH)

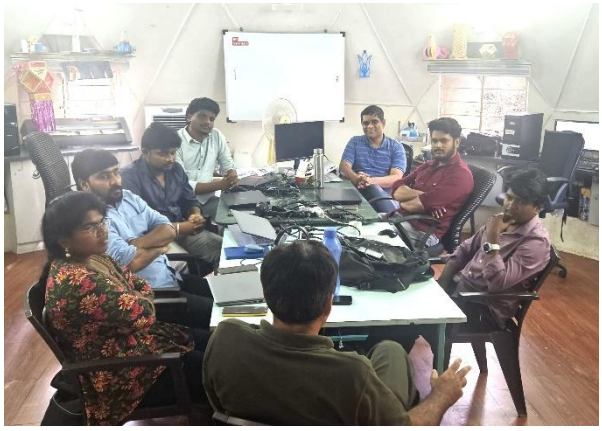
H] Atal Tinkering Lab (ATL) & DIY lab update:

Vigyan Ashram supported the Viksit Bharat build-a-thon project at Kasturba Gandhi Balika Vidyalaya (KGBV) residential schools for girls in Kandukur and KGBV Osman Nagar, Telangana. Hema and Pavan visited the schools to assist and guide students in their project activities.

ATL team conducted following online sessions for AP ATLs in the month of October 2025.

No.	Date	Topic	Link
01.	07/10/2025	Design and make your own Diwali lantern (A.P)	Click Here
02.	21/10/2025	Working of advanced clinometer with laser projection (A.P)	Click Here
03	08/10/2025	Design and make your own Diwali lantern (Telangana)	Click here
04.	22/10/2025	Blood circulation (Telangana)	Click here

- Yogesh visited Vijaywada on 28th and 29th October to meet SPD – Samagra Shiksha to discuss Project Management Unit (PMU) proposal and constraints of Vigyan Ashram in bidding for tender.
- ATL team from AP, Karnataka, Telangana visited Pune in the last week of October to finalize ATL Manual.



ATL team at Pune

DIY Lab updates:

60 students from Yojak organisation participated in one day workshop at Pabal. Students learnt chikki making, paper circuit, woodwork activities.

DIY Pune conducted various activities in the month of October for Dussehra and Diwali festivals.

The videos of activities are available on YouTube: Design your own puzzle https://youtu.be/gHLSV9-Pduo. Dimensional designing, Laser cutting and wall decor making https://youtu.be/eDoh2YhNGwY

I] Other titbits:

i. Mr. Pradyumn Ghatate from Asha Foundation visited Pabal on 5th October. He explored business opportunities by talking to VA alumni and businessmen.

ii. 11 DBRT students, 6 DIC fellows, and 3 Vigyan Ashram staff members attended CNC lathe machine training. An in-house training was organized by Mr. Anil Gade on 25th October.

iii. Yogesh Kulkarni visited Dantewada – Bijapur district from 6th – 9th Oct. Objective of visit is to explore possibilities to implement vocational education in schools with District Administration. He met District collector and CEO of Dantewada and CEO of Bijapur. He also visited few porta cabin schools where we had introduced IBT program in the past.

Dr.Yogesh Kulkarni's interview on Akashwavi, Pune was aired on 16th Oct. Its recording is available on https://youtu.be/wjQk23CAy4k

iv. Weather record – Rainfall of the month – 153.00 mm (Total: 793.87 mm), Max temp-33.00℃, Min Temp –18.00℃, Humidity –59%, Water height in well– 5.40 m, Waste-water COD- Boys hostel- 280 ppm (slightly higher), Girls hostel- 210 ppm (safe)

v. Energy consumption record- Electricity unit – III Phase- 1323 units, I Phase import- 1960 units, solar export III Phase – 531 units, Solar export I Phase- 91 units, Solar generation (off-grid)-69 units, DG used – 02:15 Hrs, Biogas- System under maintenance

vi. Animal Husbandry section update – Milk production –0 Kg (Loss Rs:7025/-), Poultry batch (broiler)– 91 birds sold (FCR: 2.11, Loss: Rs.4756/-)

vii. DBRT alumni of 2024-25, Tushar Bhadekar donated a 1.5-year-old heifer to the Ashram.

New member included in Vigyan Ashram family.

viii. Online visitors: www.vigyanashram.com –1180 (Organic-571, Other-609), Pabal campus visitors: 245+

J] Data Report: https://shorturl.at/smYTP

(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:

Embroidery session during instructor training

CNC training

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