

Vigyan Ashram Status Report

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A] Open House Exhibition @ 29th-30th July

On 29–30 July, the Open House Exhibition was held at the Pabal campus on the occasion of the 23rd anniversary of Vigyan Ashram's founder, Dr. S. S. Kalbag. The event showcased technology development, skills training, and school-based vocational education programs developed at Vigyan Ashram. Key technology highlights included Black Soldier Fly (BSF)–based waste management and plastic-pelleting, the Vibro-Thermal Disinfector (VTD) for extending grain storage life, a chapati-making machine, a tea-making machine, and ready-to-cook food demonstrations.

Students from partner schools participating in the Introduction to Basic Technology (IBT) and the New Education Policy–aligned Kaushal Bodh program exhibited project-based prototypes they developed as part of their coursework. The exhibition drew over 4,000 visitors—students from more than 30 schools and colleges, farmers, women's self-help groups, and residents of surrounding villages—reflecting strong community engagement.



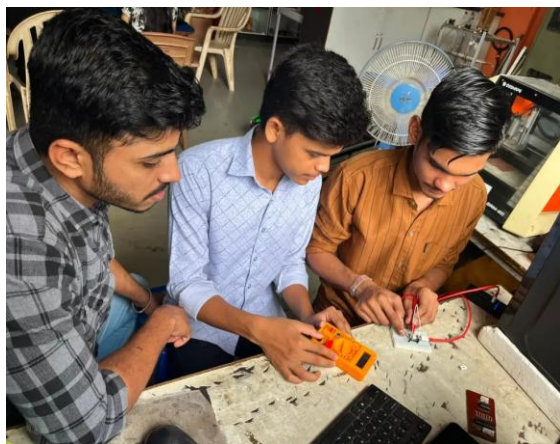
This year's Young Entrepreneur Award was presented to Jayesh Dhayarkar (Talegaon-Dhamdhere) for his accomplishments in precision farming. The Special Achievement Award went to Akshay Sawant in recognition of his contributions to home composter development. We extend our sincere gratitude to our supporters and to the Pabal community for their continued encouragement and partnership in nurturing grassroots innovation.

B] Welcoming new students batch of DBRT 2026-27

The one-year DBRT program began with 63 admissions (53 boys, 10 girls). Students have settled on campus and started their training modules. This residential program follows a 'learning-by-doing' methodology and is divided into four sections: Agriculture & Animal Husbandry, Energy & Environment, Materials & Mechanics, and Home & Health. This year we will be giving special emphasis on soft-skills (spoken English, presentation, books reading, art education) and advanced computing skills.

C] The Fab-Academy (2026) graduation & skills training program updates

Fab-Academy-2026 updates: Fab Academy is a 6-month global program in digital fabrication, embedded technology, and rapid prototyping, conducted through a worldwide network of Fab Labs under the guidance of the Fab Foundation, with final graduation ceremony at MIT, Boston, USA. As part of the course assignments, Arati Bhosale worked on automation of the Smart Tulsi Mala (Holy Basil Stem Beads) Machine, while Ashish Shende designed and developed a Solar Panel Efficiency Enhancement System. The program reflects the philosophy of Make Almost Anything with hands-on learning, innovation, and problem-solving for real-world applications. We wish best luck to Arti & Ashish for future endeavours.



Fab-Opportunity-

Academy (FAO): A short-term (60-day) training program on "Advanced Manufacturing Skills" training program started at Pabal campus. The course aims to empower young aspirants with new-age competencies in digital fabrication, embedded systems, and electronics—aligned to industry needs and entrepreneurial ambitions. The 1st batch of 9 students started from 1st July. Students learnt electronics design, embedded programming, use of input & output devices during 4 weeks training. Individual students learning assignments, and project work can be found on – <https://vadic.vigyanashram.blog/watershed-management/>

D] Technology development & dissemination @ DST_SUNIL & TAPRISE

Black Soldier Fly (BSF) based waste management & backyard poultry farming:

- Ayush began designing a new BSF breeding chamber to simplify humidity control. The current sprinkler-based system frequently clogs from hard water and algae, so he created a CAD model that uses a jute-thread water curtain and an exhaust fan. He plans to fabricate the new chamber with this central humidity system.

- Hritik started work on development of an artificial-light system for the BSF breeding chamber. He is combining a Blue, Green & UV light wavelength frequencies with 48 V, 83.2 Ah DC power supply. He has built a small prototype breeding chamber to test LED lamps but failed in getting adult flies due to higher temperature.
- Ganesh & Mahesh visited backyard-poultry farms established in Ambegaon region for distribution of BSF live larvae (BSFLV) as poultry feed. Total 90 kg of BSFLV were distributed to 4 farmers in Taleghar region to test Feed Conversion Ratio (FCR) and feeding cost saving.

Improvement in protected cultivation practices:

- On 1st July, Ganesh & Pranit visited Maha-Krushhi FPO polyhouse (capsicum cultivation) unit at Pandharpur (Dist-Solapur). They installed a temperature & humidity data logger along with a new mobile application with pest scouting for Thrips & Yellow-mite.
- On 14th & 21st July, 3 units of data logger were installed for capsicum & rose farmers at Talegaon-Dhamdhere and Retwadi respectively.



Other technology development work:

- Vibro-Thermal-Disinfector (VTD): Aditya changed vibrating tray mechanism (by shifting vibrating movement to the frame, addition of springs, change in motor mount system and eccentric weight) and reduced tray inclination angle. Trial showed holding time of grain has been increased to 8 min (earlier 3 to 4 min) while grain outlet temperature was ~48°C. The treated grain showed complete elimination of adult insects, but new insects emerged during storage (2-weeks). This shows storage grain pest eggs survive at 48 °C (8 Min) heat exposure. Further heat exposure may reduce grain quality & also lead to weight loss so the team is exploring use of micro-wave or IR heat lamps for complete elimination of storage grain pests after treatment.
- Ganapati idol mould: Hritik while working on Ganapati Idol 'Shadu-Mati' press mould built a first working prototype. He is facing jerky motion & path slippage for guide-rod. He is working on overcoming this issue by increasing dead-weight to top-plate.



- Arya and Shekhar developed a Ragi-Ambil premix powder using a process of 6-hour soaking, 20-minute cooking at $55\pm 2^{\circ}\text{C}$, and 36-hour fermentation (titratable acidity rising from 0.02% to 0.04%), followed by drying at $55\pm 2^{\circ}\text{C}$ for 5 hours to yield a ready-to-use powder. They also standardized instant premixes of Pooran, Wheat-kheer, Beetroot halwa, and Gajar halwa.
- Ms. Samruddhi is developing a microbial consortium for PBAT biodegradation. She isolated microbes from cow dung, a dumping ground, and diesel-contaminated plastic waste, and has ordered additional fungal and bacterial strains for the study. She is also testing the effect of sulfuric acid on PBAT's mechanical properties (tensile strength). In the Soil testing laboratory, Jyotsna prepared 200 H_2S water testing, tested 4 waste-water (COD and 3 soil samples).
- B.Tech Agriculture students from Udaipur Rajasthan namely Ayush, Sidharth, Vijay and Hitesh and Ms.Aarya (B.Tech food, Dr.PKMKV, Parabhani joined Design Innovation Centre (DIC) program in July. They will work on bamboo hanger, Black Soldier Fly (BSF) chamber, low-tunnel farming etc projects.



E] Ongoing Activities of DBRT students:

The following are some of the key learning activities of students in each section:

Energy & Environment section: Students learnt the basics of electrical wiring while fixing the electrical connection to a 600 sq. ft. poultry farming shed on the campus. Students also installed CCTV cameras in the food-processing lab, learnt overhauling of DG sets, repaired washing machines and conducted regular repair and maintenance work of electrical connections for 30th July open house exhibition. The total community service value for July was Rs. 62,477/- including Rs.9,015/-students earning.



Engineering section: Students learnt basic metal fabrication skills (Arch & CO_2 welding, power cutter & drilling), CNC operation (Plasma cutting), Painting (Spray & powder-coating) skills. They fabricated 6 units of beds for the hostel, fabricated dismantlable planter stand, a storage tin-roof shade and UPVC pipe-based hydroponics fodder cultivation unit as group learning activities. Total value of their community service was Rs.70,858.00 with students earning of Rs.9,860/-

Home & Health section: In this section, students learnt basics of dehydration, bakery and sugar-syrup based preservation. Students processed 40 kg Jackfruit seeds to prepare its powder (worth Rs. 5,159/-) and other pre-mixes (worth Rs.19,650/-), 16.6 Kg Moringa Chikki (worth Rs.66,40/-), 15 kg bread flour and 3 kg Tamarind sauce. Total sales value for July was Rs. 47,300/-



Agriculture & Animal-husbandry section: In the farming section, students learnt basics of soil testing, composting, plant-nursery and dairy-goat farming skills. Students sold 1000 seedlings of cucumber and forest trees (100 plants harvested 500 kg of vermicompost, planted drumstick plants and capsicum in a polyhouse.

Apart from this, students participated in the 29th–30th July Open House Exhibition, as well as meditation and personality development club activities.

Details of individual projects & intern-student work can be found - <https://vadic.vigyanashram.blog/>

F] School based vocational teachers training & student learning updates:

- Teachers training program: A training on 67 school-teachers from Maharashtra state was conducted at Pabal campus during 30th June to 3rd of July. Teachers supported by Schaeffler India Foundation (STARS Forum), Mahle Engineering India Ltd CSR and Self-Funding participated in the training to learn implementation of 'Kaushal-Bodh' vocational education subject as per NEP-2020 guidelines. Teachers participated in hands-on learning activities while working on building habitat-garden & trellis garden (Life-form), hand-embroidery & cooking-without fire (Material & mechanics) and creating effective advertisement (Human-service) themes.
- Students learning highlights:
Dada Maharaj Natekar School, New English School (Dhamari), Sumati Balwan School (Katraj), Khandaray Vidyalay, have registered for Seed The Future Entrepreneurs program. Schools were introduced to the design thinking methodology to help them develop and build their respective projects. Online meetings were conducted to guide them through the process and provide the necessary support.
- PMRDA Updates
Our team visited selected schools in Pune and conducted meetings with principals, teachers, and other school staff for planning the new academic year. Understood the challenges and constraints of each school and accordingly planned various projects for Classes 6, 7, and 8. Some of the shortlisted projects:



cooking without fire, kitchen habitat, advertisements, hydroponics, family health manual, robotics and others.

G] Strengthening of ATL @ KREIS residential school of Karnataka:

The project will strengthen Atal Tinkering Labs (ATLs) across KREIS residential schools in Karnataka. From a total of 147 schools, 36 schools (one per district) will be developed as model ATL centres to serve as demonstration and mentoring hubs for other residential schools in the state. In the month of July, recruitment of field staff was completed. Orientation training for the new team was held at the Pabal campus during 26th to 30th July. The purchase process for computers for 30 schools has been initiated. The field team will begin school visits and student training in the coming months.

H] Do-It-Yourself Lab Updates:

- In July, students from Level 1, Level 3 and Gurukul batches did various hands-on activities related to mechanical systems, electronics, designing and creativity. They learned about gears and automata, Arduino, LED blinking and traffic lights. Students also explored 2D and 3D designing using Inkscape, Tinkercad and Pepakura. Along with this, activities like origami tessellation, glass painting and making paper models were also conducted.



I] Other titbits:

- i. The DBRT students generated a total community service of Rs. 1,80,635 across the Energy & Environment, Engineering, and Home & Health sections during July.
- ii. Tana Mahajan, an intern from MIT Boston, USA successfully completed her two months internship with Vigyan Ashram on 25th July 2026.
- iii. Management committee meeting of Vigyan Ashram held online on 4th July. Mr Ashok Kalbag, Mr Vijay Kumar, Dr K.C Mohite, Mrs Pallavi Shanbag and Dr Yogesh Kulkarni attended the meeting.
- iv. Yogesh and Ranajeet attended a Text book development workshop - Grade 10, Vocational Education at Bangalore from 13th - 17th July organised by PSSCIVE.
- v. DBRT students assisted the Asmita team with cutting 124 T-shirts for the upcoming Open House exhibitions. They also completed the cutting and stitching of 101 lab aprons.
- vi. Weather record – Rainfall of the month – 341.74 mm (Total: 396.54 mm), Max temp-33.00°C, Min Temp –21.00°C, Humidity –86 %, Water height in well– 5.70 m, Waste-water COD – Girl’s hostel – 192 ppm, Boys hostel – 244ppm (within limit)
- vii. Energy consumption record- Electricity unit (import) – III Phase-2828 units, I Phase-353 units, solar generation III & I Phase – 2185 units, Solar generation (off-grid)-54 units, DG used – 1.30 Hrs, Biogas-15.85 m3 (317 kg dung used).
- viii. Animal Husbandry section update – Milk production –579 Kg (Profit Rs:747.00).
- ix. Online visitors: www.vigyanashram.com –3069 (Organic-1751, Other-1318), Pabal campus visitors: 4000+.

J] Data Report: <https://acesse.one/lvhjnbh>

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Ltd, Schaeffler India, Texol Engineering Pvt Ltd, K R Shroff Foundation, INDUSA Endowment, Savitribai Phule Pune University, Asha for Education, Praj Foundation, The Prabhu Trust, STARS Forum and many individuals and foundations).

Photo Gallery:



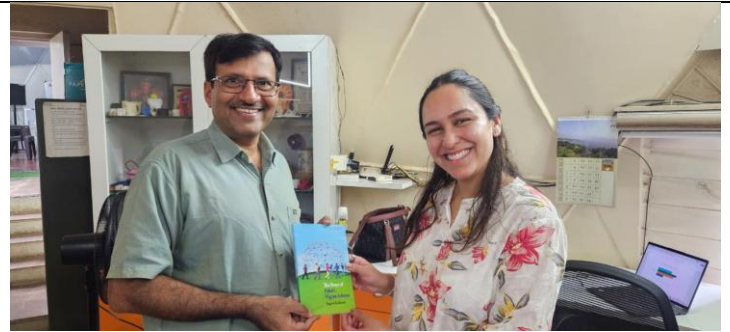
FAB LAB: Making paper circuits



Open House Exhibition



Open House Exhibition



Tana Mahajan from MIT Boston completed internship



DBRT Students repairing washing machine



140 Vigyan Ashram T-shirts by ASMITA

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