

Vigyan Ashram Status Report

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A] Faculty Development Program (FDP) @ Patkar College, Mumbai:

Vigyan Ashram conducted a 5 days Faculty Development Program (FDP) at Patkar - Varde College, Goregaon (Mumbai) during 4th to 8th February in collaboration with 'Maharashtra State Faculty Development Authority' (MSFDA). The faculty

members were Dr. Yogesh Kulkarni, Mr. Ranajeet Shanbhag and Dr. Arun Dixit from Vigyan Ashram.

Training was attended by 27 faculties from Engineering & Technology, Social Science & Humanities, Natural Sciences & Mathematics, Commerce & Management and



FDP session in progress



Problem identification journey

Language-Literature section. Training was based on 'Design Thinking, Innovations & Entrepreneurship' methodology developed by Vigyan Ashram. Participants learnt steps involved in design-thinking, its linkages with college curriculum through hands-on activity sessions.

B] Tinkering workshops for Chote-Ustad:

Chote-Ustads associated with Pratham Education Society (Pune) attended 2 days of residential tinkering activities based on 'recycling plastic waste' in 4 batches. Total 120 students participated in these tinkering workshops during 24th February to 6th March at Pabal. Students made scientific toys and useful articles while learning concepts of plastic segregation, recycle & re-use. Students also learnt basic electronics, designing, using hand-tools, 3D printing skills while participating in small treks, morning walks, meditation activities at campus.



- DIY lab also conducted a 1 days tinkering workshop for 50 students from Pratham Education society. These students were selected from various schools from Sambhajinagar.
- As a part of regular weekly activities, membership students worked on water-PH indicator, making of nutrient rich food, water level indicator etc. Total of 59 students from the age group 8 – 20 years participated in these activities & worked on different STEM projects.



DIY workshop @ JPNC

C] DBRT students' Skill Training update:

Following are important section specific highlights of DBRT program in February:

i) DBRT students fabricated tables for hostel

SPA Education Foundation has supported us for upgradation of student's hostel. As part of the work, DBRT students completed fabrication of 16 'study tables' for boy's hostel. Students learnt metal fabrication, powder coating and carpentry skills while fabricating these tables. Total value of their work was Rs.38,832/- including labour charges of Rs. 4,665/-.

Student also fabricated tools hanging-board, shoe stand and goat feeding manger in the workshop. They completed the wall painting work of the ASMITA section. Students started the design & fabrication of new-staircase for the 1st floor of the guest hostel building. Total value of their community service was Rs.1,40,524/-.

ii) Home & Health section: In this section, students prepared moringa-chikki, gajar-halwa pre-mix (6 kg), Tamarind sauce (5 kg) and processed 36 kg bread flour in the bakery. Total value of their sale was Rs.16,681/-.

iii) Agriculture & Animal husbandry section: In the Agriculture section, students planted 30 water-melon seedlings as intercrop. In the poultry farming unit students learnt the operation of egg incubator, brooding of new chicks and Feed Conversion Ratio (FCR) calculation. Students also harvested 80 kg vermicompost, sold 153 poultry chicks and produced milk (240 lit) in a dairy farm. Total value of their community service was Rs. 6,120/-.

iv) Energy & Environment section: In electrical section, students installing new flood-light & MCB in guest hostel. Students installed 3 tube-lights, repaired CCTV units in the farming section, and repaired the water-pump of the grey-water recycling unit as regular maintenance work. Students learnt motor rewinding for a water-pump while visiting a rewinding expert in Pabal village. Total value of their community service was Rs.7,724/-.

v) Computers & service sector: In the computer section, students learnt the use of 'Ideogram' for logo designing. They also worked on new AI tools like supercook.ai (cooking assistance) & Invideo.ai (text to video) apart from regular practicing for blog writing, presentation & video editing skills.

vi) Participation @ GMRT 'Science Exhibition': DBRT students participated in 'science-day' exhibition at Giant Metrological Radio Telescope (GMRT) khodad (Pune) on 28th February. We have displayed projects viz. Sensor-based climate control system, UV filter for poultry farmers and a root water channel cleaning tool. Students worked in teams for building prototypes while learning 'design-thinking' methodology of innovation.



Fabrication of table



Grafting practice



Installed 3 Phase solar system meter

D] Technology development updates: (DST-SUNIL project):

Polyhouse climate control system development: We are working on designing a AI/ML solution for polyhouse farmers.

- Suhas installed two units of temperature & humidity data logger in two polyhouses at Kharpudi village (Tal- Rajgurunagar, Pune). The units will record climatic data for designing automated controls in protected cultivation of rose-farming.
- Pranit started recording of thrips & yellow-mite infestation count & photographic evidence data for capsicum crop in polyhouse at Pabal campus. He clicked 450 photos of plant symptoms in February.
- Ganesh conducted a base-line survey of 5 capsicum farmers at Nimgaon-Jali village (Tal- Sangamner, Dist-Ahilyanagar). These farmers conduct capsicum crops with protected cultivation (polyhouse / shade-net) and are interested in adoption of sensor based climatic control systems.



Black-Soldier-Fly (BSF) based composting & poultry farming:

- Ganesh & Saurabh installed domestic poultry egg incubator at Sakhar village (Velha, Pune). They provided training on use & maintenance of egg incubator to Mrs. Sulabai Renuse (A backyard poultry farming beneficiary). It is a 180-capacity egg incubator installed with the support of Raintree Foundation under DST-SUNIL program.
- On 27th February, Ganesh conducted a 1 day training workshop on 'scientific backyard farming' for 50 participating farmers at Kushire-Khurd village in Ambegaon block of Pune. Participants learnt basic rearing practices, feed management & primary first-aid of poultry birds.
- Mahesh successfully converted approximately 33.80 metric tons (MT) of wet-waste into compost using Black Soldier Fly (BSF) larvae. He received 38.5 kg pupa for breeding.



Other research-fellow projects:

- Tejaswini completed on-field photosynthesis efficiency data collection by using LI-COR (6800) machine. She collected data of ACI (Photosynthesis vs intracellular concentration of CO₂), AQI (Photosynthesis vs light response), VPD (Vapor Pressure Deficit or stomatal conductance) for Turmeric, Rose and Fenugreek crops.
- Pranit started trials of 'Seaweed extract' in Nutrient Film Technique (NFT) hydroponics-based lettuce crop. The seaweed extract is manufactured by young startup Raft tech Solutions (Mumbai). We are providing technology testing & scaling up support to this startup in DIC. Life science lab team also prepared 300 H₂S water testing bottles & tested 4 soil-water for farmers.
- Prasad visited 'Agrozee Organics' (Urli-Kanchan) and Sahid-Rajguru Sanstha (Bhimashankar) on 15th & 16th February to study operational issues and scope for new technology / system design in the food processing sector.
- Ms. Shritika Gaydhane completed her 6 months fellowship in Plant Tissue Culture (PTC) section. Ms. Amisha Kashyap (Msc Biotechnology) and Mr. Satyam Patil (Bsc Physics), Ms. Sayali Chaudhary (Bsc Agriculture) and 3 interns (Rutika, Radhika, and Shivanjali) from BTech (Agriculture Engineering, DYP Kolhapur) joined DIC team in February month. MIT Boston, Sophia completed her internship on 18th Feb. She worked on polyhouse climate analysis and Fab village project statistics.



Dr. Yogesh visited BSF project site @ Rajgurunagar dumping yard

- **Vigyan Ashram team participated in Maker Mela @ Mumbai**

Abhijit, Tejaswini, Ganesh and Kishor participated in 'Maker's Mela' organized by RiiDL, Somaiya Vidyavihar University, Mumbai on 21st & 22nd February. They exhibited innovative technologies like AKXY home composter, polyhouse data loggers & climate controls, H2S water testing kit, Black Soldier Fly (BSF) based waste composting along with DIY lab students tinkering activity projects (soil moisture sensor, solar lamp, motion detectors etc.). Nearly 1500 students & innovators visited our stall in the two days of exhibition.



Fab academy updates: Students of fab-academy completed sessions & hands-on learning of CAD modelling, computer-controlled cutting, Embedded Programming and electronic design. Their local evaluation & global evaluation process started as per standard norms of Fab Academy.

- **F] Atal-Tinkering-Lab (ATL) & DIY lab update:**

- Curriculum development workshop @ Hyderabad: Vigyan Ashram team conducted curriculum development workshop during 4th to 6th February at Hyderabad. Workshop was aimed to finalise Do-It-Yourself (DIY) activities linked to school curriculum & Atal Tinkering Lab (ATL) guidelines. Training was attended by 18 selected teachers from Andhra-Pradesh, Telangana and Karnataka along with SCERT, Samagra Shiksha and UNICEF state teams. Based on the discussion and initial draft of the activities prepared during the workshop, VA team will work on finalizing content, illustration, photographs & video links for the activity book.



- Meeting @ Christ University: Kishor & team presented importance of 'DIY & tinkering activities' to Dr. Greta Dsouza (Head of Department of School of Education) and Dr. Sebastian Mathai (Director, School of Social Science) Christ University's (Bengaluru) on 27th February. Team discussed steps in establishing a maker-space / Fab-Lab and its integration with the university activities.

- ATL team conducted 9 online training sessions for ATL instructors & students in Andhra-Pradesh (4 sessions), Telangana (3 sessions) and Karnataka (2 sessions).

https://youtube.com/playlist?list=PLMwF5XmZp_aiMjDToFB4rwr1LiFbLGFsG&si=ZuDLOFfwAGqeK4l0

- **G] ASMITA project updates:**

ASMITA Team learnt stitching of 'hand-bags'. They completed order of tote-bags & carry bags (50), formal shirts (14), window curtains (4). Team generated community service of Rs. 15,900/- through sales of garments, bags, curtains etc. On 7th February, CSR team of MAHLE Engineering India Service Pvt Ltd visited Pabal campus to review project progress & support requirement.



- **H] Make-a-Thon of ITI students:**

A Make-a-Thon for Industrial Training Institute (ITI) students was conducted from 17th to 21st March at Pabal campus. It was the 4th Make-a-thon under the MAHLE Engineering Service India Pvt. Ltd. – CSR support. Total 19 students of Welder & Fitter trade from Shri. Kulswamini ITI (Vadaj, Junnar, Pune) participated in the Make-a-Thon training. Students fabricated the 'product display rack & storage unit' and 'dining table for kitchen' while learning metal fabrication, glass cutting, powder-coating etc. Students used equipment like CO2 welding, plasma cutting, metal sheet bending etc. for their project fabrication while learning 'design-thinking' methodology.

I] Entrepreneurship Development Program (EDP-VATF) update:

Hero of the month:

Mr. Dattatray Kolhe started a “Kukadimai Udyog Samuh” a homemade beauty products enterprise at-Jambut, Tal-Shirur, Dist.-Pune. He is manufacturing onion seed hair oil, ayurvedic face-packs from past 6 months. We are providing a product packaging, labelling and digital marketing support in under EDP program.

Entrepreneurship mind-set training workshop: A 2-day training workshop in developing mind-set for rural entrepreneur was conducted at College of Agriculture Polytechnic, Narayangaon (Pune) on 6th & 7th February. Training was attended by 40 aspiring entrepreneurs from the dairy-technology section to learn identification of opportunity, SWOT analysis, cost calculation, marketing plan etc. through hands-on activities.



Sliding window & motor rewinding training: An on-field skills training program on fabrication of sliding windows & basics of motor rewinding was conducted at Borghar village (Tal- Ambegaon) in collaboration with Shashwat NGO. Training was started on 28th February with enrolment of 60 rural youth for 12 days training. Our alumni entrepreneurs Mr. Vaibhav Rahane x & Mr. Somnath Khaire conducted hands-on training sessions on sliding window & rewinding skills respectively.

Webinar @ Opportunities in agri-tools renting service: EDP section hosted a webinar on ‘opportunities in agri-tools renting services’ was conducted on 16th February. Webinar was attended by 45 participants to learn overall scope of business, investment requirements, return on investment, major challenges etc. from VA-alumni entrepreneur Mr. Arun Kamte.

Marketing linkage & mentoring support:

- EDP alumni Mr. Pramod Pansare (Shrinath foods) and Mrs. Seema Durgude (Gurukripa Papad & Vedika Masale) participated in sale & exhibition of their product at ‘Manchar Krushi Utppanna Bajar Samiti’ agriculture exhibition 2025.
- On 15th February, Ganesh visited Mrs. Mohini Mandare to provide on-field guidance for manufacturing & sales of home-made pickles.
- An enterprise registration & licensing support provided to 4 new entrepreneurs (2 – food licensee & 2 shop-act). Similarly, digital marketing support was provided to 8 budding enterprises.



J] Introduction to Basic Technology (IBT) program updates:

IBT Maharashtra: Students learning activities in schools (VA-SF):

- Seed The Future Entrepreneur (STFE):** This year, 12 teams from IBT schools in Maharashtra got shortlisted for the presentation stage of the STFE competition. STFE conducted by Atal Innovation Mission (AIM) in association with Dassault Systemes (La-Foundation) with the aim of introducing high school students to a world of ‘design-thinking’ computer aided design, digital fabrication & entrepreneurship etc. During February, student teams worked on finalizing the prototype of selected ideas (need), marketing & presentation pitch. We are guiding teams in finalizing prototype & online submissions.
- IBT students at Sangise School conducted a ‘community service’ drive in their village. Students offered installation of Azolla-farming bed to farmers, making of earthing-pits for safe electricity use, repairing water supply pipe line service while working in teams with their instructors. Villagers appreciated their learning and community service initiatives.**



Students of Sangise school repaired pipeline

Villagers appreciated their learning and community service initiatives.

iii) Students of Agriculture & Animal Husbandry section, in the 4 IBT schools such as Khadaki, Moi, Madaj and Nirgudsar learn vermi-composting while processing 3-ton of cow dung in their school. Students learn the importance of earthworms in farming, vermi-compost bed installation & regular maintenance skills through this activity.

iv) Science exhibitions @ IBT schools: Students in IBT schools celebrated 'Science Day' with joy & enthuse. Students at Padsare school (Raigad) organized a 'Chota Scientist' exhibition while in Shivkar school a 'Kaushal Mela' was organized by students. They displayed various project & learning activities like solar cooker, water level indicator, food-products, composting etc. to visitors, parents, guests, junior students.

v) IBT students of 8th & 9th standard students in Dhondegaon (Nasik) school learnt wall-painting skills while painting 289.76 m² wall of their newly constructed IBT labs. Students learnt the type of different paints, brushes & rollers used for painting skills through this task. Total 31 students collectively worked for 56 hrs while generating a community service of Rs.30,000/- for the task.

vi) Students at Salumbre School, organized a 'food & forest tree sapling selling' stall on the eve of Mahashivratri at nearby temple. They sold 45 saplings, 6 Kg vermi-compost, 28 cloth bags and 2 kg flowers to visiting devotees while learning marketing, accounting and record keeping skills. Total value of their community service was Rs.58,000/-.



Exhibition @ Padsare school



Salumbre composting stall on Shivaratri occasion



IBT exhibition @ Shivkar high school

vii) In the Tung IBT school, students installed 40 tube-lights in the school premises. Students got the work order from school administration as regular maintenance work. They learnt the basics of electrical wiring, switchboard functioning, cost calculation etc. skills through this activity. Students earned community service of Rs. 8,100/- through this activity.

viii) Dr. Yogesh conducted online training session for staff members of Lend-a-hand-India on implementing 'Koushal Bodh' on 11th Feb 2025.

Updates on Learning-By-Doing (LBD) and STEM program (STARS Forum):

Learning-by-doing @ Uttar-Pradesh:

- Total six teacher training programs were conducted for implementing the 'Learning by Doing' program at Institute of Entrepreneurship Development (IED) and State Institute of Rural Development (SIRD) at Lucknow. Training was attended by 580 teachers.
- VA team conducted online sessions for LBD school teachers with pre-recorded training video on geoboard for geometry, magnetic pen-stand, a gravitational force-based toy and periscope.



Seedling tray activity during training

STEM educational program @ West-Bengal state:

- STEM laboratory material is delivered to 10 schools in Murshidabad district. Field team is working with school HM and teachers to install tools and lab setup.
- Field team also helped local teachers to conduct STEM activities on making of catapult, balancing toy, vertical bag farming, making flute from straw etc. in 6 schools benefiting 256 students.

STEM educational program @ Jharkhand

Mr. Ajay Kumar (Program Manager -Jharkhan) and Ms. Tina Khatum(field-officer) joined the team of STEM program, Jharkhand. Both completed base-line surveys for 12 Kasurbha Gandhi Balika Vidyalaya (KGBV) for implementation of the STEM program.

K] Other tit-bits:

- Suhas presented Vigyan Ashram's approach for Rural technology development & dissemination at FDP conducted by MSFDA, Pune on 5th Feb.
- Yogesh and Ranajeet attended 'Working Group Meeting for Development of Activity Book on Vocational Education for Grade 8' during 17th to 21st February at PSSCIVE, Bhopal. Both are working on writing content for 8th grade vocational education textbooks under New Education Policy (NEP).
- Yogesh visited ISKON – Palghar to meet Gourang Prabhu on 5th Feb.
- Mr. Chetan Amale donated 'Celestron Astro Master" telescope to Vigyan ashram on 17th Feb.
- Priyanka Chowdhary and Komal Shambudas attended 'She Leads' boot camp from 1st – 2rd Feb at Bengalore.
- Yogesh attended Finance committee meeting @ IIE, Pune on 24th Feb.
- Weather record – Rainfall of the month – 00 mm (Total: 596.44 mm), Max temp-36.00°C, Min Temp –10.00°C, Humidity –68%, Water height in well– 2.70 M.
- Energy consumption record- Electricity unit – III Phase-762 units, I Phase import- 2515 units, Export- 25, Solar generation (off-grid)-625 units, DG used – 02:00 Hrs, Biogas- 46.00 m³ (dung used-920 kg)
- Animal Husbandry section update – Milk production – 340 Kg (Gross profit Rs: 2,920/-). Poultry egg incubator – 153 chicks (76.5 % hatching rate)
- Online visitors: www.vigyanashram.com – 1135 (Organic search- 602, Direct search-533). Campus tour visitors: 132.



K] Data Report: <https://shorturl.at/24sNy>

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Photo Gallery:



Maker Mela @ Riddi Mumbai



Chikhali School – IBT activities



Priyanka and Komal @ She Leads camp @ Bangalore



ITI Students Makathon : Students working on project



STEM @ West Bengal



STEM @ Jharkhand



STEM@ Maharashtra

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