

Vigyan Ashram Status Report

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(Short from film made on DBRT student's journey made by DIC-DBRT students team using A.I.)

A] Art with Artificial Intelligence on 'Art Day'

18th March was 7th anniversary of Amma (Mrs. Mira Kalbag), founder of Vigyan Ashram. We observe her anniversary as 'ART DAY'. We tried to learn new art skills on this day. This year, we all learned new tools using 'Artificial Intelligence' for making various Art form. We learned to make video, animation, translation, writing script, creating music and songs using AI. Students made presentation of project made using different AI tools.

You can watch sample project on <https://shorturl.at/inoJX>

We had invited Expert pottery maker Mr. Bhanudas Waje (Sahyadri School) and Mr. Shridhar Rajguru (Gawdevadi) to teach us pottery skills. Staff and Students enjoyed mud-preparation, use of pottery wheel to make pots etc.



B] TAP-RISE: Technology assessment workshop:

First workshop for shortlisting technologies developed by NGOs for scaling up was organised on 7th March at New Delhi. It was under the project 'Technology Acceleration Platform for Rural Innovation & Social Entrepreneurship' (TAP-RISE) project supported by DST (GoI). Total nine new innovative technologies were presented by 8 NGOs and Institutes. Vigyan Ashram and Development Alternatives will assess these

technologies for 'Technology Readiness Level' (TRL) for providing further support under the project. Dr. Yogesh Kulkarni & Mr. Swapnil Dhokale participated in the workshop from Vigyan Ashram.

C] Facility upgradation of Tissue culture & Microbiology lab:

Facility upgradation work of tissue cultural laboratory is complet. This work is supported with financial assistance of SPA educational foundation. The upgraded facility has new 350 ft² laboratory facility for micro-biology with heat insulation walls, industry grade electrical wiring and lab furniture. The new equipment like positive-pressure, glass-bid sterilizer, digital pH-meter, weighing balance, chemicals etc. were also procured and installed. Lab staff got training & consultation from industry expert. The construction, wiring & furniture work was done by DBRT students as their learning activities. We are very thankful to SPA education foundation for their continuous support.



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

i) Welding fabrication & basic electrician training: During 14th to 22nd March, a training program was conducted for 10 students from tribal belt of Nasik & Nandurbar district. The students were sponsored by "Community Empowerment for Strengthening Livelihoods' program of AFARM organization. Six students learnt basic electrician skills while four students learnt metal fabrication skills through hand-on activities. Electrical section students performed tasks of house wiring, solar panel installation, repair & service of home-appliance etc. Students in the workshop section learnt basic welding, sheet-metal bending & basic carpentry skills through hand-on activities. They have also completed electrification in local-school and earned community service of Rs.10, 660/-.



ii) Milk processing enterprise: A two days training on milk-processing enterprise was conducted on 2nd & 3rd March at Kunjir Dairy Processing plant, Urali-Kanchan (Pune). 10 aspiring entrepreneurs attended the training. They learn manufacturing of Khowa, Panner, Ghee, Dahi etc. by directly working on factory-floor. Mr. Dada Kunjir (founder of Kunjir dairy) was resource person for the program.

iii) Millet processing enterprise: On 9th & 10th of March, a hands-on training on 'millet-processing enterprise' was organized at Agro-zee Organics Pvt. Ltd. Urali-Kanchan (Pune). Training was attended by 4 participants to learn common types of millets, health benefits, processing protocol (for cookies, ready-mixes, popcorn etc.). Millet processing expert Mr. Mahesh Londhe, Ms. Rutuja Vishwasrao were resources.



Milk Processing training @ Kunjir dairy

iv) Webinar @ Import-Exports sector: An awareness creation webinar on business opportunities in import-export sector was conducted on 10th March. Expert consultant Mr. Hasan Jamsher Tadvi guided participants in various aspects of sector, key skill, licensing requirements along with major challenges in the sector. Webinar was attended by 66 participants.

Field visits & mentoring support:

- During 26th to 28th March, Vishal visited Pragati Abhiyaan, Nasik to help them for maintenance of agricultural tools purchased for agri tool bank in kotabi, Surane and Bare village.
- Yogesh Omkar visited Dr. Pagare (Nasik) a trainee of millet processing enterprise training workshop as part of on-field incubation support. He also met Mrs. Leena Bansode (IAS officer, Shabri Vikas Mahamandal) on 26th March for discussion on EDP initiative.
- On 29th March, Ganesh visited Mrs. Seema Durgude (Spice enterprise) at Naryangaon to provide on-field mentoring support.
- Licensing support provided for 5 entrepreneurs (Udyam Addhar-2, Shop-act-2)

Hero of the month:

Mrs. Shalini Tripathi started a 'donut worry bakery' retail shop at Hinjawadi (Tal-Mulshi, Pune). Shalini is EDP short term course trainee and receiving technical mentoring, marketing, graphic design support.

Mrs. Pushpalata Mahajan new millets product

Shopee 'Hansita Gruh Udyog' at-Nashik-road (Nashik). She was student of millet-processing training workshop.



E] Technology development & DIC updates:

i) Red-Chilly dryer: To study water evaporation rate with respect to air flow & solar radiation, Abhishek and Prasad conducted 6 different trials on 1 mtr. diameter dome-dryer at Pabal campus. They used saturated wood saw-dust for data collection with two experiments for each trial set. The air flow was modified with the help of exhaust fan at different locations & time duration. The maximum water-evaporation rate was recorded with 4kg/day loading (35% solar heat harvesting efficiency). Experiment details can be found on - <https://vadic.vigyanashram.blog/2023/11/07/solar-chilli-dryer/>



ii) Black-Soldier-Fly (BSF) based composting & poultry

farming: In the month of March, total 4130 kg of wet waste were processed using BSFL (Black Soldier Fly Larvae) at various locations. Following are some of the updates -

- **BSF breeding chamber:** Dr. Arun & Mahesh successful tested application of Oxalic Acid ($C_2H_2O_2$) to reduce Total Dissolved Solids (TDS) of water. Due to higher amount of calcium in water, spray fogger gets clogged affecting temperature & humidity in the breeding chamber. $C_2H_2O_2$ reacts with calcium to form Calcium Oxalate (CaC_2O_4) which precipitates reducing water TDS. For 1000 lit of water (initial TDS 348) 120 gm of $C_2H_2O_2$ was used to reduced TDS up to 275 (6.5 to 6.8 pH).
- **BSF larvae separator:** Mahesh & Siddhant motorized BSF larvae separator with 0.5 HP geared-motor. The sieve RPM was adjusted to 16 RPM. A separating drum has 2 sieves (primary sieve of 18 mm mesh size & secondary sieve 10 mm) with 9° inclined slope. The separator processes 120 kg waste/hour reducing manual labor to 8 hrs/kg.
- A one-day training was conducted on BSF based feeding for farmers from Igatpuri (Nasik) on 5th March. The training-workshop was organized in collaboration with BAIF research & development foundation. Total 50 farmers attended the workshop to learn basics of BSF farming, poultry feeding results etc. along with other advanced farming technologies.
- **Backyard poultry farming training:** Three on-field training workshops on poultry farming were conducted for 57 farmers. Technologies like bamboo housing, feed management & vaccination etc. were demonstrated to farmers. Training was conducted on 1st March (20 farmers from 5 villages of Gunjawani region, Velha), 21st & 22nd March (27 farmers from 10 villages of Dimbhe region, Ambegaon) and 30th March (10 farmers from 3 villages of Pasli, Velhe).



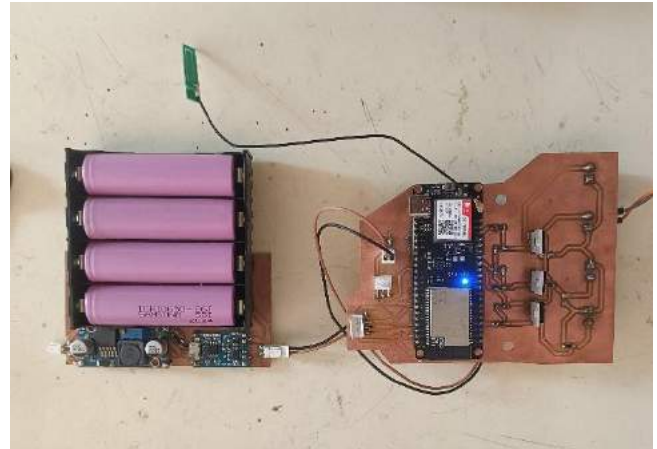
BSF Larvae Separator



Farmer training on BSF based feeding for poultry

Polyhouse climate control system development:

- Ranajeet & Nikita concluded capsicum trial in polyhouse. They collected data on fan-pad system water evaporation rate for temperature-humidity maintenance, pest infestation (Yellow mite & Thrips) in relation to climatic conditions, pesticidal effect on pest intensity. Key finding of trial can be found on - <https://vadic.vigyanashram.blog/2024/04/08/optimizing-polyhouse-condition-temperature-humidity-and-pest-data-collection-for-enhanced-crop-management/>
- Suhas completed Printed Circuit Board (PCB) design for mass manufacturing of weather-data logger device for polyhouse farmers.
- Work on upgradation of existing climate-control polyhouse facility has started at Pabal campus. The work of rolling shed-net screen installation is completed. It's a manual rolling mechanism for controlling light intensity & temperature inside polyhouse. The rolling system will be further automated on light-intensity sensor. The work of repairing of fan-pad system water-drainage line, fogger installation has started.



Data logger unit

DIC updates:

- Himanshu tested modification in EV-mounted sugar-cane juicer with 200 kg sugar-cane crushing. He is modifying chain-pully mechanism, gear box mounting etc.
- Omkar prepared 50 H₂S bottles and 10 Kg composting culture in micro-biology lab. Vedika is still facing contamination in 2nd transplant of tissue culture plants for Moringa plants. She has started working on Lemon, Banana and Napier grass for comparing its growth in similar growing conditions.
- Pranay Yadav and Prudhviraaj Rapaka successfully completed their 6-month DIC-fellowship program. Lohit Gourav, Siddhant Said joined internship program from March.
- 4 management students SPJMIR (Mumbai) Development of Corporate Citizen (DoCC) joined for 1 month internship program. They worked on project to develop business plan for VA alumni entrepreneur, tapping freelancing opportunities for rural youth.



Sugarcane juice on Electric Rikshaw

Fab-academy updates: Prachi & Sumit completed their electronic design, computer-controlled machining and output device assignments in March. They have also started make-a-machine & project design work. Their individual assignments & learnings can be found on - <https://fabacademy.org/2024/labs/vigyanashram/>

F] DBRT skill training update:

- On 13th March, DBRT students visited Pune city for one day refreshment picnic. Students visited historical places and electronics marketplace.
- Mrs. Dipali Chaudhari from Foundation for Communities of Learning (formally Durga Devi Trust, Pune) visited Pabal campus on 15th March, to interview students for scholarship support. They have selected 4 students for financial assistance.
- Due to increasing summer heat wave (Afternoon temperature more than 38°C), outdoor activities for DBRT students are restricted to shed-areas.

Following are some of the highlighted learning activities of students as -

i) **Workshop section:** Students fabricated a conference-table for new audio-visual lab, polished pine-wood top & metal frame. They also completed refurbishing of old spot-welding machine, fabrication of table for soil-laboratory and painting work in polyhouse. The cost of conference-table was Rs.30,510/- (including Rs.3500 student's earning). Total value of community services offered by workshop department was Rs. 2,01,101/-



This group made this conference table

ii) **Energy & Environment:** Students in energy & environment section completed installation of 3 CCTV cameras at Do-It-Yourself lab Pune. Students learnt selection of appropriate camera, digital video recorder, cabling skills while completing installation work. The total cost of work was Rs.23,000/-. Students also learnt service & maintenance of refrigerator in kitchen, installed 125 Amps MCB in workshop and learnt motor re-winding skill. Total value of their community services in the month of March was Rs.5,15,050/-.

iii) **Home & Health section:** Students prepared natural Holi-colors. They used dried flowers and vegetables (onion, beet-root, turmeric etc.) for color making. In food processing they processed 55 kg bread flour for bread & cookies making. Students also prepared (5.26 kg), pickles from lemon & turmeric, lemon squash etc. while learning sugar-syrup based preservation.



Students learning motor rewinding

iv) **Agriculture & Animal husbandry section:** Students prepared H₂S bottles for testing *E-coli* in potable water. Students learnt different lab skills such as, use of laminar-flow chamber, preparing media for microbial growth etc. Students installed fogger system in new 330 Sq ft azolla-cultivation shed while learning basics of micro-irrigation system. They harvested 98 kg capsicum and 5.2 kg cabbage from polyhouse.

MSBVET examination: DBRT certificates takes 2 years to complete. Therefore, we have decided to give option to students to appear for short term courses of MSBVET. 28 students (out of 37 applied for the certification) successfully completed Maharashtra State Board of Skills, Vocational Education & Training (MSBVET)

examination in Welder, electrician, solar technician and basic food processing trade. The remaining students will re-appear for examination in due time.

G] IBT Maharashtra & Uttar-Pradesh updates:

IBT Maharashtra updates: March is almost end of academic year. Following are some of the highlights of IBT program -

IBT inauguration @ Waghera School: On 1st of March, IBT program was formally inaugurated at Utakarsh Ashram Shala, Waghera (Tal-Trambak, Dist-Nasik). Program is financially supported by TATA Technologies CSR initiative. Mr. Ganesh Khedkar (V.P. TATA Technologies), Ms. Uma Krishnan (CSR Manager), school management committee members were present on the occasion (STARS Forum).



Inauguration of IBT program @ Waghere

Employee volunteering by Schaeffler India: Team of 12 employees from Schaeffler India Pvt. Ltd. participated in the learning activity at Shriram Vidyalaya Navlakh-umbre (Pune) on

20th March. Volunteers had participated in making of natural Holi colors with students. Students gifted 3-D printed articles made in the schools to volunteers (STARS Forum).

Students learning activity:

- Students of Sant Dnyaneshwar Vidyalaya (Chas) constructed 130 ft fencing wall in school. They worked in teams to construct brick-wall base with MS frame based fencing wall. Total value of their community service was Rs.65,000/-
- IBT students at Vahangaon school, repaired windows in school. For parliament election these windows had to be repaired as per polling-booth protocol. They also fabricated 2 units of seating stool & sold to local shopkeeper in village.



Making natural colours for Holi

- On the occasion of women's-day (8th March), students of Navlakh-Umbre school conducted 1 day training camp for SHG members. The camp was attended by 10 SHG members to learn making of liquid soap and hand-wash etc. Students also opened e-mail accounts of participants.
- IBT Students of Narayangoan School fabricated & installed a safety door to staircase in school premises. They fabricated gate of 6*3.5 ft and community service value of Rs.11,000/-.

Learning by doing (LBD) @ Uttar-Pradesh updates (STARS Forum):

- LBD schools are in last phase of their educational year. We have recorded video feedback of student, instructor and school administration for better implementation of program.
- Dr. Yogesh Kulkarni visited LBD schools in Naubasta (Lucknow) and conducted project review meeting with field staff on 5th & 6th March. He also met Samagra Shiksha Abhiyaan and UNICEF officials for planning implementation of program at 1772 schools in the state.



LBD exhibitions @ various schools

HJ) Atal-Tinkering-Lab (ATL) & DIY lab update:

Team review meeting: A one day team review meeting was conducted at UNICEF Hyderabad office on 12th March. Meeting was attended by UNICEF senior officials, VA senior management team, field officers (Andhra-Pradesh, Telangana and Karnataka state). Meeting was aimed at reviewing project objectives, activity progress, sharing success stories & challenges in project implementation. The next year's implementation plan was also discussed & approved for next 2 quarters. VA team conducted internal review of ATL project in all three states on 11th March @ Hyderabad.



UNICEF and Vigyan Ashram - ATL project team

Following are some of the important highlights of ATL activities in March -

ATL Andra-Pradesh:

- Three workshops were conducted for 130 engineering college student volunteers in association with UNICEF, APCHC (AP state council of Higher Education) and BCDE (Board for Community Development through Education). The workshops aimed at training engineering students as ATL volunteers. Workshops conducted were as follows- 1. Lendi Institute of Engineering and Technology, Vizianagaram

(29th February to 2nd March), 2. Lakireddy Bali Reddy College of Engineering, Mylavaram, Krishna (4th - 6th March) and 3. JNTUA College of Engineering, Anantapur (13th -15th March).

- Ms. Deepti Madhura (UNICEF, Delhi office) visited Vijayawada to document ATL project outcomes during 19th to 22nd March. She met program stakeholders viz of ATL lab students at ZPHS Penamaluru, engineering colleges and government officials to take feedback on project activities.



ATL Karnataka:

- On 21st March, online orientation program for ATL lab teachers, school officers, nodal officers of Haveri district were conducted. Session was aimed to provide orientation on effective implementation of ATL activities, inventory management, AIM portal entries, etc.

Inauguration of Low cost Maker Space (LCM) in Telangana State

On 15 March 2024, Smt. K. Seetha Lakshmi, IAS Secretary, Telangana Social and Tribal Welfare Department launched 10 Low Cost Maker Space (LCM) in the state of Telangana State. She inaugurated Maker Space at TSWRS ISNAPUR and remaining 9 schools were present online. UNICEF Chief of Field office Dr. Zalalem Taffesse, Educational Specialist Mr. Madhusudhan SheshaGiri, Shiksha Rana and Brinda Pilai and Shravya were present.

Do-It-Yourself (DIY):

- Tinkering workshop @ Pabal campus: During 4th & 5th March and 9th & 10th March, two residential hands-on learning workshops were conducted at the Pabal campus. Total 30 students of 6th to 8th std from Pratham Education Foundation associated schools participated in the program. Students learnt science application through making toys, hydraulic cranes, grabbers etc. from cardboard.
- The Art week was celebrated @ DIY lab Pune with 3 tinkering workshops. Students learnt to make recycled paper sheets (2nd March), making natural Holi-colors (22nd March), Calligraphy art work (23rd March). Total of 23 students attended these tinkering workshops.
- During March, two weekend tinkering workshops were conducted for 10 students. They learnt chain mechanism (8th & 9th March), 4-wheeler drive mechanism (15th & 16th March) while making a working demo-models.



I] Other Tit-bits:

- On 8th March, 'International women day' was celebrated with full of joy & learning activities. On this occasion, kitchen & housekeeping lady staff learned basic 3D design & printing. Dixit Ajji talked to girls about ethics of life & career goals.
- MAHLE Engineering Services Pvt. Ltd. conveyed their sanction for Asmita project. Under this project, we will establish training cum production center for Women Self Help Group at Pabal.
- Vigyan Ashram's Management Committee (MC) meeting was held on 17th March 2024 at Pabal campus. Meeting attended by ten MC members to discuss new project proposals, decisions on capital item purchase, decisions on admin issue.
- Bhakti attended State level workshop on Planning for welfare of Divyang on 11th



Bhakti @ Workshop for Welfare of Divyang

March as a panellist. She presented VA courses and approach to entrepreneurship. The workshop was attended by Mr. Bacchu Kadu (Chairman, State level committee of Divyang Welfare).

v. Rangpanchami was celebrated on campus with joy & enthusiasm on 30th March. DBRT students prepared natural colours and due to water shortage, only dry colours were used for celebration.

vi. Yogesh Kulkarni visited Narmadalaya, MP on 23rd and 24th March to discuss technology development & admin issues related to Chilly dryer.



DBRT Students Pune Trip

vii. Weather record – Rainfall of the month – 0 mm (Total: 478.72 mm), Max temp-38.00° C, Min Temp – 13.00° C, Humidity –49%, Water height in well– 2.90 M.

viii. Energy consumption record- Electricity unit – III Phase-617 units, I Phase import-108 units, Solar generation-1586 units. DG used – 4:00 Hrs, Biogas- 48.19 m³ (dung used 964 kg)

ix. Animal Husbandry section update – Milk production – 550.5 Kg (Gross profit Rs: -3983.00). Poultry- 131 egg produced. Goat farm- 1 goat died due to enterotoxaemia on 16th March.

x. Online visitors: www.dsttara.org – 1221(Organic search-964, Direct search-257), www.vigyanashram.com – 1494 (Organic search- 860, Direct search- 634). Campus tour visitors –251

JJ Data Report: <https://shorturl.at/gpEKZ>

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Photo Gallery:



Polyhouse repairing work in progress



Officials of Mahle visiting CNC facility



Art Day : Learning Pottery



Presenting work of 'Art with Artificial Intelligence'



Inauguration of Low cost Maker Space @ Telangana



Director -VA visiting LBD school @ Lucknow



Employee volunteering activity of Scheffler school



Food lab apron stitched @ Sewing lab

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