

Vigyan Ashram Status Report

Volume 40 Issue 11

November 2022

In this issue

- **Living Lab visit: Visit of foreign delegates to Vigyan Ashram**
- **Actress Priyanka Chopra visited IBT school @ Lucknow**
- **Teacher's Training of ATL labs from Karnataka @ Pabal**
- **Fab Innovation Award : New CNC machine for Vigyan Ashram**

A] Living Lab visit: TUM-IITB-SEED annual symposium-2022

Vigyan Ashram is a partner of CTARA, IIT-Bombay in its living lab project. Living lab project is supported by Technical University of Munich (TUM). TUM-IITB-SEED (Sustainable Energy and Entrepreneurship Development group) organised their annual symposium from 23rd– 26th Nov at IIT-Bombay. As a part of annual symposium, 70 foreign delegates visited Vigyan Ashram on 25th November. The delegates were from various universities from African, South-American, Asian countries. We had displayed different technical projects developed as part of living lab project for e.g grey-water recycling, polyhouse automation, solar applications, biogas and gasifier etc. Delegates also visited Mukhai school to see 'Fab village' project. Ranajeet participated in the symposium and presented Vigyan Ashram's living lab projects on 22nd Nov at annual symposium.



B] Actress Priyanka Chopra's visit to IBT school @ Lucknow (Stars forum)

Bollywood actress Ms Priyanka Chopra is a brand ambassador of Unicef. She visited IBT program at Lucknow (composite schools, Aurangabad) on 7th Nov 2022. Students displayed their learnings & projects like solar dryer, haemoglobin testing, kitchen gardening, robotics application etc. This visit has helped in creating interest among Govt official's and community about IBT program. It also helped to motivate students as well as instructors, teachers and all the members working on the IBT Program. Educational department officials Riya Kejriwal (Chief Developmental officer), Madhav Tiwari (Senior Education Specialist), Ranjit Singh (Educational specialist), Ritwik Patra (UNICEF Education head), Mr. Arun Kumar, BSA) were present for program.



C] Teacher's Training of ATL labs from Karnataka @ Pabal

A teacher training workshop of Atal Tinkering Lab (ATLs) teachers from Karnataka was conducted from 8th to 11th November. Workshop was conducted at Pabal & DIY lab (Pune). Total 17 teachers participated in the workshop. They learnt basics of 3D designing, printing, laser cutting, basic of microcontroller & sensor application etc. They also visited IBT program at Katraj school on 11th Nov. This workshop was a part of Unicef supported project of Strengthening ATLs in Govt schools.



D] Fab Lab Innovation Award: Vigyan Ashram won Covid hand washing challenge during FabX international conference in 2020. Ms Aditi Kharade submitted idea for hand washing challenge during pandemic time. As an award, we have received 'Forest scientific corporation (USA) make CNC machine (approx. \$10000)' on 19th Nov. It is imported machine and we paid custom duty of Rs.2.5 lacs. This machine is 8*4 ft bed size & 6 kWh power requirement. It is welcome addition to Vigyan Ashram's Fab lab. Now we can do wood routing and cutting jobs in the workshop.



E] Entrepreneurship Development Program (EDP) updates (VATF):

- Advance poultry farming training workshop was conducted on 18th & 19th November at Pabal. Training was attended by 5 participants from Pune & Ahmednagar district and 5 DBRT student. Dr.Tanaji Kolpakar (Premium Poultry Farming), Mr.Rahul Durge (Entrepreneur-Happy Poultry Farm) were resource person along with Mr.Bhanudas Daundkar, Mr. Yogesh Onkar, Mr. Ganesh Pingle.
- Participation @ Naturopathic Day Exhibition: National Institute of Naturopathy Pune (Ministry of AYUSH GoI India) organized a 'healthy food products' exhibition on 18th & 19th November at MIT-ADT University Loni Kalbhor. We have participated in the exhibition along with our alumni start-ups - Sahrudaya (Ms.Kalyani Chavli), Mr.Pramod Pansare (Srinath foods) and Shubham Yede. Honourable minister Shri.Ramdas Athwale (Ministry of Social Justice & Empowerment) visited our stall & appreciated products. Stall was visited by 3000+ other visitors/ customers.



Minister's visit to Stall

- During October, we have reached 20000+ viewers on social media while promoting technology based EDP programs. Enterprise registration support was provided to two enterprises (Udyam Certificate-1, FSSAI Licence-1).

Hero of months:

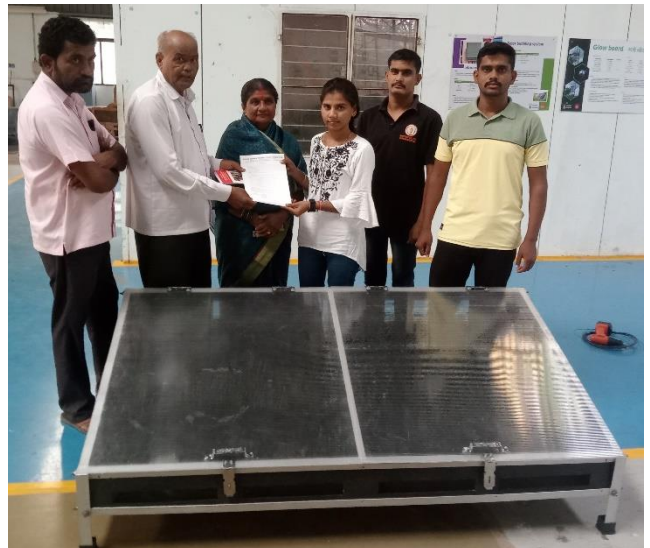
Mr. Kunal Gawandi started ‘Yugandhar Sweets’ a Dairy & Milk products Shopee at Alandi (Pune). Kunal is DBRT 2020-21 batch students & completed 10 months internship in similar enterprise. Under EDP he is getting technical training, licensing & mentoring support. He has invested around Rs.800000/- for new enterprise & provided job opportunity for 2 supportive staff.

Mrs. Sonali Dhumal started new broiler poultry-farm by the name of “Dhumal Poultry farm” At -Midgulwadi Tal-Shirur Dist.-Pune. She is EDP trainee.



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

- Solar Dryer for farmer (VATF): DIC student Nandani & Chotu lal fabricated & delivered a Solar Flat-bed dryer for Mr.B.P.Misal (Chinke, Tal- Sangola, Dist- Solapur) on 25th November. Mr.Misal wishes to start a ‘vegetable drying enterprise’ at his village. It is poly-carbonate roof cover based solar dryer with 3 to 7 Kg loading capacity (as per product density). Before delivering the dryer Nandani tested it for various input material viz. Poorna ready mix – 3.422 kg (dried weight-2.542 kg), Moringa leaves 3.363 kg (dried weight – 0.680 kg), Onion – 3.699 kg (dried weight - 0.612 kg), Amla candy 6.148 kg (dried weight- 3.539 gm), Supari- 2.0 kg (dried weight- 0.479 kg), Potato- 2.0 kg (dried weight - 233 gm), Coriander – 2.0 kg (dried weight- 0.263 gm). She has found that dryer is efficient in raw (vegetables, fruits) and processed food (amla candy, pooran mix) drying. More details on :



<https://vadic.vigyanashram.blog/2022/12/01/solar-dryer-for-vegetable-and-fruit/>

- Final Presentation of ‘Grey water recycling’ system in front of InSIC committee was done on 1st Nov. We have installed solar powered grey water recycling system near farm and dairy unit of Mr Shindade in Village kanersar.
- Mahesh processed 130 kg of kitchen waste to produce around 15 kg Black Soldier Fly (BSF) larvae & 25 gm eggs. Arun & Mahesh met officials of Rajgurunagar municipal corporation for exploring possibilities of processing slotter-house waste with BSF. Initial trial on 7 kg poultry slotter waste has encouraging results (VATF).
- Peirre Jean (EPFL, Switzerland) build new temperature-humidity data logger for polyhouse automation while comparing accuracy of different sensors. He has built new data logger and installed in polyhouse



Hello, my name is Shantarao Soma Shindade, Khanersar.

Grey water recycling @ Kanersar

for field testing. Project details can be found on: <https://vadic.vigyanashram.blog/2022/12/05/gui-coding-a-graphical-user-interface/>

- Akshada succeeded in developing Silver Sulfate (Ag_2SO_4) in-house from silver powder & H_2SO_4 acid. We required AR grade Ag_2SO_4 frequently for analysis of waste water COD (chemical oxygen demand). Its cost is around Rs.160/gm, due to in-house development now we can reduce analysis cost by 1/4th of earlier cost.
- Akshada produced 100 test-bottle of H_2S water test (bactoscope), and tested 12 soil samples during November.
- **Effect of Organic Carbon on the growth of brinjal, Cobi, tomato, and chili plant. (1- 30/11/2022)** : Sonal is conducting experiment to check growth of plants with varying different organic carbon in the soil. There were 40 bags of only soil and 40 bags of compost and soil. 10 plant each of brinjal, tomato, kobi and Capsicum were planted. Results are shown in the table. We need more trials for conclusion.

	Compost and Soil	Only soil
Brinjal	2.3kg	3.8kg
Tomato	8.21Kg	4.31kg
Cauliflowers		Insect attack
Chilly	Fungal infection	Fungal infection

- **New DIC trainees**

- i) Interns from Agricultural engineering (BTech) college completed their 4 months internship tenure. Pavan & Nimesh from Dr.DY Patil College of Engineering (Kolhapur) awarded with 'Best performing interns' for their work on Black-Soldier-Fly (BSF) project. Individual



students project & work details can be found on: <https://vadic.vigyanashram.blog/members-and-projects/>

- ii) Mr.Pawar completed 7 days hand-on learning course on 'basics of lab-analyses'. He learnt these skills for designing his PhD experimentation in honey analysis. (VATF)
- iii) Mr.George Joseph attended training 5 day 'sustainable farming practices' during 31st Oct to 4th Nov. George is engineering entrepreneur from Goa wishing to venture in farming enterpr. We will provide necessary post-training support for his future enterprise through EDP. (VATF)
- iv) Sumedh Yewale, (BE Bio- engineering) DIC fellowship program on 17th November. He will be working in the Fab-Lab on developing 'automated temperature-humidity control system for Black Soldier Fly breeding chamber'.

Fab-Lab for tribal area update:

- Jivan Bahisram joined Palghar Fab-lab as instructor for 1st November. During this month Palghar lab organized one day training-camp for high school students. Total of 58 students attended this camp to learn basics of 3D printing, laser cutting & designing applications. Suhas visited Palghar lab during 2nd to 5th November to review project & training on use of PCB milling machine.
- At Narmadalaya, conducted four training workshops for near-by colleges and schools, benefiting total of 130 students.

G] DBRT student learning updates (VATF):

DBRT students completed two sections of their course and started third section. Following are some of the highlights of their learning activities:

i) Engineering section: Students completed furniture set fabrication & on-site installation 6 IBT schools. Total value of their work was Rs.2,58,150/-.

Students learnt making of Fiberglass Reinforced Plastic (FRP) articles. Students fabricated a plastic corrugated sheet for roof (Rs.2571), repaired old water tanks (Rs.2040) & laminated wooden doors while practicing FRP skills.



FRP door making

ii) Energy & Environment section: Students completed electrical wiring work for 6 newly started IBT schools with total cost of work Rs.1,08,630.00. Students also learnt installation

& repair-maintenance of CCTV camera in Pabal campus. Students repaired connections for all (24) cameras, installed 2 Digital Video Recorders (DVR) at campus. As a part of home-appliance repair skill training student learnt repairing of refrigerator, mixture grinder & gas-stoves.

iii) Home & Health section: Students experimented with making of 'ready to use pooran-mix from sprouted chick-pea'. Students prepared a sprout from fresh chickpeas, made a pooran-mix & dried it as ready-to-cook recipe. Due to sprouting its taste has improved & enhanced protein digestibility. Apart from this experiment students practiced bakery & food processing skills while selling products worth Rs.17250.00.

DBRT students worked as a volunteer in the village feast (काल्याचे जेवण) at Bhairvanath temple on 17th Nov.



Volunteering @ temple

iv) Agriculture section: Students of agriculture section observed that milk yield of Gouri cow has decreased by 100 lits as compare to last year's lactation record for the same month. It might be due to mastitis disease & low-quality dry fodder. Now Student are trying dry-fodder treatment with urea & jaggery to overcome lower yield. They also learnt composting & poultry farming skills during month.

H] IBT Maharashtra & Uttar-Pradesh updates:

IBT Maharashtra updates:

i) 'Tinkering Day' event by Atal Innovation Mission: IBT schools participated in the 'Tinkering Day' event organized by Atal Innovation Mission on 14th Nov ('Children's Day'). More than 500 students from 22 IBT schools participated and made projects using DC motors and simple electronics components. All schools got certificate from AIM.

ii) Instructor training on basic electronics: A two-day training workshop was conducted on basic of electronics & coding for three IBT school instructors on 8th & 9th November at Pabal.

iii) Renovation of IBT labs: Renovation work of labs in 4 schools supported by MAHALE engineering is in the final stage. During November, IBT students in Chas, Narayangaon & Hivare school learnt basics of wall-painting skills while renovating their IBT labs. Students learnt type of paints, wall preparation, application methodology etc skills while working with professional painter.



Mass tinkering in schools

iv) Egg Incubator installation: Students of Nagaj (Sangli) started first batch of 150 egg incubation as learning activity of agriculture section.

v) The LTI Mindtree CSR officers Mr. Wasim Shaikh, CSR Manager, Pune and CSR representative from Hydrabad visited IBT program at Narsinh Vidyalya, Tathawade on 24th Nov 2022. The schools introduced the IBT program progress and exhibited the project undertaken by the students.



Brinjal harvesting : IBT @ Dhamari

vi) The Mamasahab Mohal Memorial School, Pirangut school started the advance IBT Ia in their schools with the support of Tata Technologies & Vigyan Ashram-Stars Forum this year. Mr. Ajit Habbu, Manager, Corporate Sustainability and CSR and Mr. Siddharth Yawalkar, Assit. Manager, Corporate Sustainability and CSR from Tata Technologies visited the newly setup IBT lab, 3D printing and advance electronics labs on 25th Nov 2022. They interacted with students and school teachers tries to know their feedback about the program. (Stars)

vii) CSR team of SCHAEFFLER India Ltd. along with management of Don Bosco (Hosur, Tamilnadu) visited Vigyan Ashram on 25th November to understand IBT program.



Teachers handbook workshop @ Lucknow

IBT Uttar-Pradesh updates (Stars):

2nd collaborative workshop on development of 'Teacher's handbook for Learning While Doing program' was organized on 16th & 17th November.

Workshop attended by 20 schools' teachers and Vigyan Ashram team - Yogesh Kulkarni, Sharad & Prashant. We have finished first draft of teacher's handbook and it was sent for DTP typing. A review meeting of IBT team members was held on 15th Nov at Lucknow.

I] DIY Pune Update:

- New laser cutter machine (100W SIL make) is installed @ DIY lab. The old machine was almost 10 Yrs old & out of service. New laser cutting facility will help student to learn designing & prototyping with updated facility.
- We got replacement from vendor for 3D printer which was having problems.
- DIY lab is busy in designing activities for ATL labs. We are conducting online session for ATLS in Andhra on every Tuesday. We are also posting videos in English on Vigyan ashram's you tube channel. (Laboratory in mobile phone: <https://youtu.be/jgFO460mF9s> ; Make your own LED torch: <https://youtu.be/5vBCMYngvYA> ; Toy making using DC geared motor: <https://youtu.be/wPebkGzB7wl> ; Hard skill- Build catapult using carpentry <https://youtu.be/LICdUaCZZul>; Software and application development- Tinkercad electronics and Hands-on <https://youtu.be/UUhNsljHWD4>)
- DIY team has conducted two sessions on 3D printing for IBT school teachers.
- Saturday membership students built wooden Tool storage box cum sitting stool for DIY lab using available plywood material and carpentry tools.



Laser machine @ DIY Lab

J] Wikipedia & Distance Learning Library (ASTI) project updates:

Wikipedia updates:

- Wiki-source training workshop: On 27th November, wiki-source training workshop was organized at Pabal campus. Aim of the workshop was to train new members in wiki-editing, proof reading & editing. Workshop was attended by 13 participants. Mr.Nitesh (CIS-A2K) was resource person for the workshop.
- Wiki-team participated in a 'Proofread-a-thon' India competition during 14th to 30th November. Aim of competition was to promote participatory 'proof read' opensource wiki-content in all Indian languages (link- https://meta.wikimedia.org/wiki/Indic_Wikisource_proofread-a-thon_November_2022). 6 wiki-girls from VA team participated in Marathi language category with total of 2233 page edited during the period.



Wiki Source training @ Pabal

Distance Learning Library (ASTI) project:

- Video shooting of 'Wall Painter enterprise' and remaining modules of 'Bio-Floc fish farming' were conducted on 25th & 26th November. Bio-floc fish farming shoot was conducted at Pabal campus while for 'wall-painting' module shoot conducted at two locations near Pabal village.
- Work on content development for 'solar drying enterprise' and 'selection & installation water pump' is in progress.

KJ] Other tit-bits:

- i. SCHAEFFLER India Ltd. CSR team along with administrators of Don Bosco from Hosur, Tamilnadu visited pabal campus & IBT program at New English School, Dhamari on 25th November to know about IBT program.
- ii. Team of 14 members from transgenders community visited the Pabal campus on 21st Nov 2022. They are part of 'PRIF transformation fellowship for transgender youth' under TISS initiative. We have discussed various skills training and livelihood possibilities for transgenders at Vigyan Ashram.
- iii. We lost 3 goat bucks this month due to stray-dog attack. Goat & dairy farm-sheds needs urgent repair. We have made some immediate repair & protection for livestock after attack.
- iv. Dr.Yogesh Kulkarni and Dr.Arun Dixit visited N.K Orchid college of engineering, Solapur on 3rd Nov to interview students for DIC internship. Dr.Yogesh Kulkarni gave a talk on 'Entrepreneurship as career opportunity' to students of Sant Ganjanan Maharaj Engineering College, Shegaon on 26th Nov.
- v. 'Sanitary Pad Incinerator' & 'Black-soldier-fly based waste composting' technologies submitted to PCMC swatch challenge-2022. <https://www.pcmcindia.gov.in/marathi/pdf/sbm2022/techeng.pdf>
- vi. Infrastructure : Food lab construction work : Slab of new food lab was done on 20th Nov. This work is supported by SPA Education foundation.
- vii. Weather record – Rainfall of the month – 0 mm (Total: 935.77 mm), Max temp-33.00° C, Min Temp –13.00° C, Humidity – 57%, Water height in well– 5.55 M.
- viii. Energy consumption record- Electricity unit – III Phase -1550 unit, I Phase import- 166, Solar generation-1753.00. DG used – 05.30 Hrs.
- ix. Animal Husbandry section update – Milk production –948.0 Kg
- x. Biogas produced-40.66M³ (Dung used- 894.5Kg)
- xi. Online visitors: www.dsttara.org – 937 (New visitor-831, Repeated-106), www.vigyanashram.com – 988 (New visitor-793 Repeated-195)



Visit of fellows from TISS program



Slab for food lab expansion

KJ Data Report:

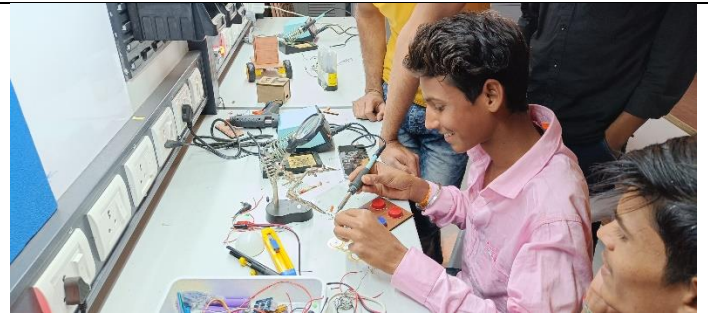
https://docs.google.com/spreadsheets/d/1HcPj_oNj1aroyxfVH0UltrcwFhEaUOj/edit?usp=share_link&ouid=101141840668207826730&rtpof=true&sd=true

(Work of VA 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, INDUSA Endowment, Savitribai Phule Pune University, Dept of Science & Technology, and many individuals and foundations)

Photo Gallery:



Video shooting: Wall painting



Fab Camp @ Narmadalaya, MP



Don Bosco, Chennai team visit to VA



Learning installation of CCTV : DBRT students



Brinjal : Testing effect of composting



Demonstration of composter to Hon MP Mrs Supriya Sule

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