

Vigyan Ashram Status Report

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A] Mudrak : Machine which can print circuits

Fab-Academy students are required to 'Make a machine' in the Fab lab as a part of their group assignment. It has to be a computer-controlled machine. Vigyan ashram students made a machine that can print circuits using materials like conductive clay or ink. Students made a conductive ink and clay in the lab using different material combinations and printed conductive circuits through the machine made by them. It is named as a 'Mudrak'. You can watch machine video on : <https://rb.gy/jvggcy>



They presented their work on 20th April in the Fab academy global class. Details of this machine is documented and available on <https://fabacademy.org/2022/labs/vigyanashram/machine.html>

B] 3-D printer installation @ IBT schools :

Vigyan Ashram is continuously updating IBT program by introducing new technologies, tools/equipment's. We are experimenting with use of 3D printer in IBT schools from last 5 years. We have conducted several workshops in IBT schools. In the month April, we have installed 16 units of 3D printer (make- Fracktal works with 250*250*300 mm bed size) in 16 schools. 3D printing will become part of regular IBT activities from coming academic year. VA is very thankful to LTI-first step CSR initiative for their financial support.



C] IBT instructor's training @ Lucknow (Uttar-Pradesh):

IBT Instructor's training was organised from 5th to 9th April @ Lucknow. Total 44 instructors from 15 districts undertook training in the area of Engineering, Energy-Environment, Home & health and Agriculture section. Training was organized at 4 different schools in Lucknow city. Subject experts from Vigyan Ashram, Mr.Ranajeet Shanbhag, Mr.Kailas Jadhav, Mr.Shridhar Rajguru, Ms.Archana Shinde, Mr.Sharad Jadhav, and Mr. Sachin Puneekar conducted the training. Mr. Salim Shaikh, State lead SHARDA project, Mr. Ranjit Singh, Coordinator Samagra Shiksha Abhiyan and Mr.Ritwik Patra of Unicef visited the training.



IBT training @ Lucknow

D] ATL teachers training workshop @ Andra-Pradesh :

A one-day training was organized for ATL principals @ ZPHS, Nidamanuru (Dist-Krishna) on 21st April. Aim of training was to introduced them about 'Design thinking' methodology in ATL projects and prepare plan for summer workshops. Training was attended by 20 ATL schools principals from Krishna & Godavari district.

Dr.Yogesh Kulkarni, Mr.Madhusudhan Sheshagiri, Mrs.Swathi Dev and



Mrs.Bhagyashri (Samagra Shiksha) guided schools about effective implantation of ATL program.

Yogesh also visited Tenali school and held meeting with Project Director and Education commissioner along with Unicef officials.

E] Showcasing Innovation @ TECHनीव@75 :

TECHनीव@75 is a series of online program organized by Dept of Science & Technology on the occasion of Azadi ka Amrut Mahotsav. Vigyan Ashram was invited in the 12th edition of program to presented VA's IBT program as a model of technology dissemination on 8th April. IBT school students of Katraj & Chikhali (Pune) and instructors from Uttar-Pradesh participated in the program to share their experiences. VA-DIC alumni Ms.Kalyani Chavali (Sahrudaya foods) also presented her journey of establishing 'food processing' business. Recording is available @ <https://www.youtube.com/watch?v=v6rjZIFh31k>

F] Entrepreneurship Development Program :

- Yogesh visited Suha Bakery (Sangamner), Tejas Gaoran Poultry Farm (Pimple Dhuma) and Samarth Masale (Manchar) to provide entrepreneurship support.
- We have helped EDP aspirants to get Udyam Certificate-3 nos, FSSAI Licence-2, Shop Act licence-2.

Hero'es of Month:

- Mrs. Kirti Abhale: Kirti has started Pickles Making Business in the name of 'Prasadik' at Panavel City, Dist.-Raigad. She has taken training, product development, social media marketing, registration and mentoring support through EDP program.
- Mr. Akshay Kajrekar: DBRT alumni Akshay (Akshay foods, Pune) expanded his business by starting marketing of mango's. He is trying to develop 'Soymilk' as a product for his venture. We are providing him recipe formulation, testing and other EDP support.
- Mr. Amol Gawade: DBRT alumni Amol is running a metal fabrication enterprise 'Shri Swami Samarth Fabrication' at Pabal. He was struggling with working capital for his business activities. Through EDP, we have supported him for preparing bank loan application, licensing / registration etc. He got loan under Mudra Scheme with first installment disbursement of Rs.1.22 lacs.



G] Design Innovation Centre (DIC) update:

- **Dryer for Self help group :** Prathmesh & Ghanshyam started fabrication of solar dome dryer & three flat dryer. We are fabricating these dryers for Women Self-Help Group (WSHG) Durgadevi Mahila Swayamsahayta Bachatgat (A/p-Shelu, Tal- Khed, Dist-Pune). The dome dryer (1 unit) will be used for drying fragrance vegetables & flat dryers (3 units) for leafy vegetables / fruits by WSHG's drying enterprise.
- Vrushabh had conducted hands on training on 'repair & maintenance E-vehicles' from 30th March – 2nd April for DBRT & DIC interns. He had covered basic aspects like important components of EV like DC motor, Battery Management System (BMS), battery power calculation & connections etc. Students performed basic repair-maintenance tasks for E-Rikshwa as hands-on learning activities.



- DIC intern Imran modified solar dome lamp to regulate charging voltage by using Im358 IC as internship project. He used IC to provide 7 V (700-800 mA) supply from solar PV. He had installed lamp at Vighanharta hotel in Pabal village to get customer feedback.
- Four (4) B.Voc (food processing) students from 'Lokbharathi Lokseva Mahavidyalaya' (Bhavnagar, Gujrat) joined DIC for 2 months internship. They are working on developing and testing new food recipes from Soymilk, Nachani Khakara, Sprout grain powder etc.
- Vibhor & Jasprit (DoCC program, SPJIMR institute) completed their 1 month internship program on 10th of April. They worked on documenting success stories of EDP beneficiaries, they also prepared pitch for investor for expansion of Egg incubator business for Anil Gade. They also prepared case studies demonstrating implementation of National Educational Policy (NEP) 2020.

- Fab Lab for tribal areas: Suhas visited Narmadalaya (M.P) on 18th April and Sri.Nityanand educational trust, Palghar on 25th April. We have signed MoU with both the

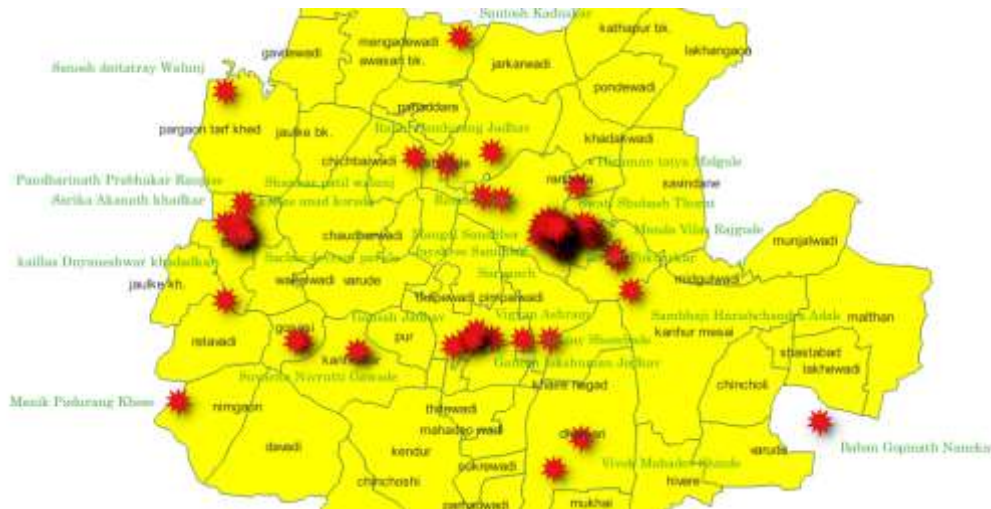


MOU for establishing Fab lab @ Lepa and @ Palghar both in tribal areas

organizations to establish Fab lab facility at their location. We have also shortlisted Technoventor as a vendor for supplying all machines and tools at these facilities.

- Masters in Design in Distributed Innovation (MDDI): Vigyan ashram has applied to become a node for conducting Masters in Design program. It is a new program in collaboration with Fab City Foundation and the Institute for Advanced Architecture of Catalonia (IAAC). MDDI will be 10-month duration program starting from October 2022. MDDI will be conducted with a combination of online and hands-on learning session on application design, digital tools, building prototype for local community-based project work. Students will get a degree from IAAC and Fab foundation. Accreditation from university in Spain is under process. More details of the course on <https://fab.city/mddi.html>
- Microbiology lab prepared 200 lits of agriculture composting consortia culture. Tested 13 soil samples and done Sub culturing for tissue culture of nodal, section of tobacco plant was done in 98 bottles.
- A proposal to set the Standard Operating procedure for the efficient functioning of ETP (Effluent Treatment Plant) was given to ASK chemicals, Ranjangaon. It was accepted and we are working on it as DIC project. We will be suggestitng the ways to reduce COD of effluent, map TDS, and suggest remedial action to treat high TDS. Swapnali will be working on the project under guidance of Dr.Mrs Jape and Dr.Dixit.

- Azolla cultivation :** Akshada found 28.57 % increase in yield of Azolla from live bacterial consortium based water feeding. From her experimentation, it is found that 1gm cane sugar + 10 gm soil when cultured for 5 days produced 45 gm of Azolla in 3 days. She is planning further trial to replace sugar with sugarcane juice to reduce cost of production.



Compost bed location @ 100 farmers field

H] DBRT student learning updates:

From this year, we have introduced short term 'summer internship' for DBRT students. Students will be placed for 6 weeks with entrepreneurs in Vigyan Ashram network. In the month of April, we have placed 40 students for internship with various entrepreneurs. Instructors are visiting interns at their workplace. Remaining 14 students are completing their course work at Pabal campus.



DBRT students @ place of internship

Following are some of the highlights of campus activities as –

- Energy & Environment section:** Students of E & E section, installed new electrical connection at agricultural farm. They worked with electricity board staff to understand power distribution, installation electrical meter etc. Students also installed 8 new LED tube lights in the workshop section, repaired & installed 3 HP water pump in well apart from doing regular maintenance work on campus. Total value of their community service was Rs.9041/-.
- Home & Health section:** Students learnt processing of soyabean while preparing 48 litre soymilk, tofu, shrikhand, lassi etc. They tested these products for its acceptability while taking feedback from fellow students & staff on campus. Ujwala & Manisha, prepared different types of Papad (Sabudana-5kg, Poha-4.5kg, Udid-2kg, Nachani- 3kg, Potato- 15kg, potato flakes 1.5kg, Nachani chakali: 500gm, Nan katai 4kg,

kur dai 1kg, khakara 500gm, Chikki 4kg to earn Rs.4941.00 as their summer internship project. Students also operated bakery to supply 24 kg of bread & 2 kg of Tamarind sauce to Kitchen.

- **Engineering section:** Students learnt fabrication of sliding windows while fixing 6 windows (144 Ft²) in newly constructed recreation centre building. Laxmi & Sonali fabricated 2 beds for hostel & 6 units of sitting desk (raised platform) for goat farm.
- **Agriculture & Animal Husbandry:** Due to water shortage farming activities are limited. Students have done composting, soil analysis, animal husbandry etc. In April months, student sold 300 kg compost. We also sold two he goats and one she goat worth Rs.12000.00. We are also preparing for monsoon season with land preparation (ploughing), compost application etc works. Agri dept supplied 6kg taro leaves (आळू ची पाने) to kitchen.
- **Computer section:** 7girls and 3 boys from Pabal village joined short-term computer course.



New electric connection @ farm

I] IBT Maharashtra & Uttar-Pradesh updates:

IBT Maharashtra: Schools in Maharashtra concluded academic year with annual examination, students' submissions. It was also time for annual project report submission, preparing proposal for next funding etc. Following are some of the highlights of activities at schools –

- Students of Engineering section of Tulapur (Pune) school fabricated 'bicycle stand' during IBT practical.
- Schools at Tathawade, Chikhali & Katraj updated their IBT section setup with new tools, working tables and colouring of labs. Facility upgradation work is financially supported by LTI-First Step CSR initiative.



- A LTI employee engagement volunteering activity was conducted at IBT Chikhali School on 30th April. Volunteers trained students in painting skills and also conducted fun activities like Antakshari for 60 students from 5th to 9th class.
- Sachin conducted meeting of 4 school headmasters at Dynanda Vidya Mandir, Narayangaon @ 20th April. It was in connection with preparing funding proposal for next academic year.
- A survey was conducted for selection new IBT schools in Maval block of Pune district. Based on the field visits & school administration response 10 school will be finalized for preparing proposal for next academic year.

IBT Uttar Pradesh:

After instructor training, IBT program activities are started. During April, around 2000 students (including 170 out-of-school children) participated in hand-on learning activities. Team is facing some administrative issues but we are getting enthusiastic response from students.

JJ Updates on ATL lab training, DIY lab & Wikipedia:

ATL labs (schools) are on summer vacation. But we are working with interested ATL teachers & students to identify and work on new projects. Following are some of the highlights -

ATL Chhattisgarh:

- Team conducted 3 online session: 1st April (D-I-Y Calculator), 8th April (Colour detection sensors), 15th April (LPG leakage detection sensor) and 22nd April (Automated temperature control system).
- We are working on finalizing DIY lab manual of all projects done at ATL labs.

ATL Andra-Pradesh:

- We have conducted 2 online sessions on the use of 'Plezmo' a visual programming interface for learning basics of computer coding on 12th & 20th April with 2729 cumulative views on YouTube.
- We are planning with ATL schools for organizing summer camps in schools.

DIY lab Pune updates:

- A 1-day training workshop on 'digital fabrication' was conducted on 17th and 24th April. Training was attended by 8 participants to learn basics of designing, 3D printing, laser cutting etc.
- Indrajit & Prathmesh guided students of PVPIT college (Bawdhan, Pune) and RMD Engg college for their college project. These students are using 3-D printer for building prototype of their respective projects.
- Monthly membership students are attending workshop on every Saturday.

Distance Learning Library (DLL):

- DLL team is working on video editing work for 'composting' module. They had completed script writing work for solar water heater installation & maintenance, manufacturing of paver blocks and wall painting skills. We had conducted reshooting of Composting topic on **24st April** at Sakori, Belhe (Pune).
- Mr. Dilip Tikle visited Pabal campus on 26th April to guide us in effective use of digital platforms for development of educational content development & delivery. He introduced 'Curriki' software (<http://www.curriki.org/>) for interactive learning experiences.
- Content developed is available on <https://theskillsguru.in/>



DIY Lab activities



Shooting of composting training

Wiki-Marathi updates:

- Ms.Komal Shambhudas achieved milestone of editing 2000+ articles.
- Reshma, Komal & Priyanka completed proof reading of 'The Twentieth century 'English-Marathi Dictionary Volume 1 (Ranade Marathi-English dictionary) link- [रानडे इंग्रजी-मराठी शब्दकोश खंड पहिला](#)



- Mr.Subhod Kulkarni & Mr.Jaynath from Centre for Indian Knowledge System (CISK) visited Pabal campus @

26th April to take review of Wiki-Marathi project. They shared details of 'eReader' computer application & tips for increasing work efficiency in books scanning & proof-reading.

K] Other tit-bit:

- Vigyan Ashram technologies viz Egg incubator, dryer and fab lab was selected for poster exhibition organised during Panchayat National Panchayati Raj Day Celebration from 24th-26th April 2022 at Village Pali, District Samba.
- Dr.Yogesh Kulkarni attended hand holding workshop organised by Dept of science and Technology at GITAM,Visakhapatnam on 29th and 30th April.
- We are facing acute water shortage due to shortfall of rainfall. Presently we are buying water through tankers for daily use & pumping around 1000 lit/day from well for drinking. During April, we cleaned our well and removed around 500 Ft³ debris.
- IIT CTARA team of Dr.Anand Rao, Dr.Srinivas Seethamrajuare & Mrs. Komal Handore visited VA on 13th April to review living lab projects and future internship. They visited Mukhai school and Vigyan ashram.
- Excavation and levelling work for Dingrajwadi grey water recycling project was started on 30th April.
- Old agriculture classroom was demolished. We will be constructing new classroom of 700 Ft² area.
- During the month of April around 261 college students from 9 different institutes/ organizations visited Pabal campus to study technologies & training modules.
- Weather record – Rainfall of the month -15 mm (Total: 665.98 mm), Max temp-41.00°C, Min Temp – 21.00°C , Humidity – 37% % , Water height in well– 8.00 M.



Visit of Engineering college students to Vigyan Ashram

- ix. Energy consumption record- Electricity unit – III Phase -1477 units , I Phase import- 153, Solar generation-1690. DG used – 01.10 Hrs.
- x. Animal Husbandry section update – Milk production –443.25 Kg, Poultry –NA, Goat- NA
- xi. Biogas produced-23 M³ (Dung used- 575 Kg), E-rikshwa use : 572km (One Rikshaw is under maintenance), Water purchased- Rs.17500 (11 lakh litre)
- xii. Online visitors: www.dsttara.org – 859 (New visitor-765 Repeated- 94), www.vigyanashram.com – 1235(New visitor-1033 Repeated-202) ; Campus visitor : 350

LJ Data Report: shorturl.at/pzGSV

((Work of VA is supported by Asha for Education, Praj foundation, EATON Foundation, L & T infotech, SPA Education Foundation, Mahle Engineering, Tata Technologies, Unicef, INDUSA Endowment, Govt of Chhattisgarh, Savitribai Phule Pune University, Insic, Dept of Science & Technology, and many individuals and foundations)

Photo Gallery:



Visit of CTARA team : Living lab



Food Technology interns @ Food lab



Tissue culture : tobacco plant



Testing of micro solar dome @ hotel in Pabal

For Regular update: www.facebook.com/vigyan.ashram.pabal ; www.vigyanashram.blog
www.vigyanashram.com