

Vigyan Ashram Status Report

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A] Vigyan Ashram's response to Omicron

Government guidelines on spread of *Omicron* & shoot-up in COVID cases forced us to close hostel. Therefore, Vigyan Ashram advised its students to return to their home on 5th Jan. Out of 54 students, 42 students went to their homes while 12 students preferred to stay back at hostel.

DBRT classes were stated in online mode. We had adopted a blended online-offline learning method. Students were encouraged to join any 'workbench' in their neighbourhood. Work bench is typically fabrication workshop, garage, self-employed technician etc. We got very enthusiastic support from parents and participation from students.

Following are some of the highlights of their home-schooling activities-

- **Electrification of community hall :**

We have 8 students from villages from Palghar district. They were offered electrification of newly constructed community hall at Bhaisar village (Dist-Palghar). We send our instructor Mr.Vishal Jagtap to give on-site guidance. This group of eight students completed electrification of community hall during 20th to 23rd January. They fixed 49 electrical points including main distribution box, earthing pit etc. They earned Rs.7350/- as labour charges on total contract value of Rs.27636/-



DBRT students completed electrical wiring of community hall



Ganesh making candy



'Sumit' brand sauce

- Sumit Mohale prepared a 2 kg 'tomato sauce' and sold it to neighbours with proper packaging & labelling.
- Keshav Joshi checked density of home-invertor lead acid batteries while topping up water level. He also repaired an iron-press at home while replacing its heating coil.

- Mangesh Modavi worked at 2-wheeler service centre (garage) at his village for 4 days to learn basics of bike overhauling.
- Sumith Mohane worked on installation Solar PV system and electrical fittings at his village. He also worked at jaggery powder making unit in his home-town to learn its basic work flow.

Students shared their learning through photographs on 'google classroom'. We are hoping to get back students on Pabal campus soon & start offline classes.

B] FAB Academy 2022 begins:

Fab academy-2022 batch started their training from 26th January. We have 7 students doing the course. They are from varied experiences & skill set. It includes professor from Engineering college, Entrepreneur from Delhi, Mid-career engineer from industry and four engineering students from Maharashtra and Gujarat doing this course. They will stay on campus for next 6 months and learn to 'Make almost anything!' under guidance of Dr.Neil Greshenfeld.

A warm up 'Pre-academy' sessions on website design, video/ Image editing, *git* project management etc were conducted during 17th Jan-25th January for all students.

Fab lab instructor Suhas attended an online 'Global instructor boot-camp' from 11th -15th January.

Details of course and students are on : <https://fabacademy.org/2022/labs/vigyanashram/>



Fab Academy class in progress

C] 26th January celebration:

73rd Republic Day was celebrated with full of pride & enthusiasm. Flag hosting was followed by cultural program & sports competition. All students & staff on campus participated in the culture program activities including individual / group dances, drama, songs etc. Students who were not on campus also participated through pre-recorded video & virtual presence. A real fun was 'LAGORI' game after cultural activities. Staff & student team played with full energy & sporty spirit. As a part of 'Shram-daan' Volley-ball ground was prepared on the campus.



D] Design Innovation Centre (DIC) update:

- Solar dryer for fish drying: Purneshwar fabricated a 'Solar fish dryer' against order received from fisherwomen through 'Bhagirath Gramvikas Pratishthan, Kudal (Dist- Sindhudurg)'. Small fishing community fetched losses due to 1-2 kg un-sold leftover every day. Normally they dried this leftover by open sun drying method. Purneshwar designed easy to assemble cabinet type solar dryer with 1.67 m² loading capacity. It can handle 3 to 5 kg fish loading per batch. A polycarbonate sheet cover is provided for 70 % light (heat) penetration along with protection from sunburn, dust etc. During the trials dryer showed 13-15 % higher efficiency as compare to open drying. Further its free from dust. Dryer was shipped to customer at BGS, Kudal.



Purneshwar with Solar dryer for fish

- Grain sprouting for Kitchen: Ashish successfully tested new version of 'Grocubator- a grain sprouting unit' designed for campus kitchen. He has tried to address problem in the earlier version of sprouter. It has automated water spray-jet & draining mechanism. Rotation mechanism ensures maximum aeration for sprouting grains. Sprouter is successfully tested for 2-3 kg horse-gram, chana, green-gram etc.

- Sonal did purification of microbial samples for Polymeric-Chain-Reaction (PCR) based DNA sequencing @ Botany department of SPPU. She has submitted batch of 11 purified samples on 2nd Jan for sequencing & expecting results in next 2-3 weeks.

- Sonal made three visits to six composting beds at Sandbhor vasti , Vadgaon pir for inspection. We have put composting bed with approx. 11 ton cow dung and agriculture waste.



Composting bed at Wadgaon pir

- Sonal & Dr.Arun Dixit visited 'ASK chemicals' Ranjangaon plant on 8th January for consultation on microbial consortium based Effluent Treatment Plant (ETP) management.
- Shankar from 'Narmadalaya' (Madhya-Pradesh) is attending DIC training in virtual mode. While conducting 'empathy' survey for farmers, he had found chilli farmers fetched heavy losses due to improper drying of ripe chilli. After brainstorming sessions, he has finalized hybrid (solar conductive +

solar water heat exchange) based dryer. His first draft sketch for 'solar ripe chilli dryer' is ready. Now he is refining it based on net heat (solar radiation) capturing calculations.

- Prasad, Vrushabh & Purneshwar are working on designing of LPG based 50 capacity per batch 'sanitary pad incinerator' against order. The incinerator will be installed girls hostel premises of Shri.Bhagwanrao Napate Institute of Health Care (Paud). Initial CAD modelling, technical details will be available on - [CAD MODELING FOR INCINERATOR | DESIGN INNOVATION CENTER \(vigyanashram.blog\)](http://vigyanashram.blog)
- Mr Prasad Patil, Dr. Yogesh Kulkarni, Mr. Ranajit Shanbag, Ghanashyam Bande visited the location of Digrajwadi on the date 5th Jan. Visit was mainly to select site for grey water recycling system and discuss implementation ideas with Greeny and Villagers.
- Agricultural B.Tech college students joined DIC for their 4 months summer internship training. Total 14 students from 3 colleges will complete 4 months training at Pabal campus. Due to COVID travel restriction, we have conducted online sessions on 'design thinking' for them. They will join Pabal campus once travel restrictions will be relaxed.



EDP program



Vikas Gardi @ is goat farm

E] Entrepreneurship Development updates:

- EDP orientation for Women Self-Help Group (WSHG) was conducted on 15th & 16th January at Maina Village (Dist-Panjim,Goa) in association with 'Vanarai'. Total 48 WSHG members participated in the training to learn resource mapping, selection of enterprise, marketing etc. VA team also introduced 20 different technology-based ideas along with their business models. It was an interactive session followed by field visit to successful women-entrepreneurs. We are planning detailed field training for 5 budding enterprises in the coming month.
- Yogesh provided enterprise registration service to 5 budding enterprises with UDYAM Certificate-2, FSSAI Licence-2, Shop Act-1,GST registration-1.

Heroes of the month:

Mr. Vikas Gardi: Vikas has started his Goat Farming business in the name of '**Aaba Goat Farm**' at Chichbaiwadi, Dist.-Pune He is our 'goat farming training' student & now getting mentoring support for enterprise scaling up.

Mr.Tejas Dhadave: has started a business of poultry Farming & home stay services in the name of "**Tejomay-Nature's home stay**" at Kalambat village near Dapoli (Ratnagiri). Tejas is 2007-18 batch DBRT students, and regularly getting technical & mentoring support under EDP. He has also enrolled for social & digital marketing support for his new venture.

F] DBRT student learning updates:

Though most of DBRT students learnt through online classes and DIY activities at home. Twelve students stayed on Pabal campus. Following are some of the highlights of Pabal campus students activities-

- **Engineering section:** Team of Pratik, Sachin & Samarth fabricated a rolling gate for boys hostel. They learnt isometric drawing, work-order & bill of material (BOM) preparation apart from metal fabrication skills. They earned labour charge of Rs.1926.00 for work-order of Rs.12520.00.
- Team of Shubham, Prathmesh, Prasad, Ramkrishma earned community service of Rs.1200 (total workorder Rs.5634.00) while fabricated a poultry cage by utilizing scrap material.
- Madhav completed painting of toilet block with total work order value of Rs.2010.00.
- **Agriculture section:** With shortage of water, farming activities on campus are restricted to polyhouse cultivation & animal husbandry. In the poultry farm, students tested azolla based poultry farming. They recorded FCR of 2.0 for 50 % protein replacement with azolla in overall ration. Students also performed 'deworming of goats' while learning basic health management practices.
- **Energy & Environment section:** Sachin & Chakradhar repaired 20 electrical sockets on campus to ensure safety & aesthetics of plugs total value of work was Rs.3650.00. They also replaced lead acid battery (12 V 65 Ah) for ladies hostel grey water recycling system.
- **Home & Health section:** Group of 3 students in H & H department processed 25 Kg wheat flour to prepare bread & toasts. They also made tomato & tamarind sauce (1.5 kg), till ladoos (3 Kg) and learn preparation of khoa while serving 'gulam-jamum' during 26th January program.
- As a part of digital fabrication learning students learnt operations of laser cutter machine and basic electronics.



Students with Fabricated gate by them



Students replacing bearing of tractor

G] IBT Maharashtra & Uttar-Pradesh updates:

IBT Maharashtra:

Most of the schools are closed due to COVID-Omicron spread during January. IBT students continued their learnings through projects, community service activities from home. We are providing online support and conducting online sessions. Following are some of the highlighted work activities of IBT schools-

- IBT team was engaged in video shooting of projects for online Technovation exhibition of IBT projects.
- VA team conducted 2 online sessions on sprouting method using machine and basic electronics for IBT students and instructors in this month. Total 12 instructors and 218 students (90 male and 128 female) attended these sessions.

- Workshop section students of Dhamari (Pune) school, fabricated a 'onion root & leaves cutter' for farmers. After harvesting root, leaves needs to be removed from each onion bulb. Its tedious & time-consuming operation. Students adopted cutter design from online reference & fabricated a cutter with revolving blade attached to DC motor (10 rpm) & a rechargeable battery (12 V). As compare to traditional method, machine is 2 times faster & costs just Rs.2700.00 (capacity 4 min/kg).
- IBT students of Energy & Environment section at Nande School, fabricated 'grey water recycling system' for school. It works on 'reed bed' principle of water recycling with capacity of 200 Lt. Students are planning to collect on-field application data and present it in a science exhibition. While working in agriculture section, students sold fresh organic fenugreek (methi) vegetable cultivated in School to earn Rs.200 as community service.
- Reshma Mohan Shinde from 9th std repaired her home flour mill. She saved Rs.1000 on repairing charges.
- Workshop section students at Amboli school, fabricated window grills to learn metal fabrication skill. They also earned a community service of Rs.2100.00 while completing work.
- Yogesh Kulkarni and Sachin Punekar visited Tulapur school for selecting school for IBT program.



Preparing for Technovation



Grey water system @ Nande school

IBT Uttar Pradesh:

- Due to 'winter vacations' & 'COVID 3rd wave' IBT schools in Uttar Pradesh remained closed during January. During this period technical team worked with government administration for instructor recruitment, tools purchase and Hindi content development (PPTs, safety manuals etc) as per project objectives.
- Nazim Khan joined as team a 'field coordinator'. Nazim will be based at Muradabad & help in coordination of field activities & local administration support.
- Unicef has agreed to continue project with STARs forum due to admin issues at IIE.

HJ Updates on ATL lab training & DIY lab:

ATL Chhattisgarh:

ATL lab student & instructors attended following online sessions during January as –

Date	Name of session	YouTube link
7 th Jan	Preparing for ATL marathon	ATL Marathon
14 th Jan	Application of ‘design thinking’	Design thinking process for ATL Marathon Projects
21 st Jan	Designing a ‘water bot’	Water Bot
28 th Jan	Designing a ‘math bot’	Math Bot

- ATL marathon participation- We are mentoring 12 students from 6 schools for ATL marathon participation. Students worked on defining problem, designing a solution & fabricating prototype using ATL tools.
- A quarterly meeting was conducted on 7th January with UNICEF team to update on various activities, students’ participation & further plan of action.

ATL Andra-Pradesh:

- Inauguration of ATL mentoring project : Project activities are formally rolled out with the inaugural session on 4th January. Principal secretary, Commissioner of School of Education, State Project Director, Director of SCERT, Education specialist from UNICEF, Director Vigyan ashram and other Nodal officers were present for the inauguration program. <https://www.youtube.com/watch?v=qNLI9XtS8V4&t=1s>
- Awareness program for lab-instructors and school administrations @ Guntur district was conducted on 8th January. District Educational Officer, District Science Officer and Regional Joint Director of Education from Guntur , Prakasam and Nellore district were present for program along with 50 school participants.
- Mr.Vipul Shinde (BE Electronics) & Mr.Rajiv Kaza (BE Electrical & Electronics) joined as field coordinator to support ATL labs.
- Prathmesh visited ATL school in Vijaywada district during 2nd to 7th January. He met school administration & introduced new team members (field co-ordinators) to school support team.
- Total 5 online sessions for ATL students were conducted in January.

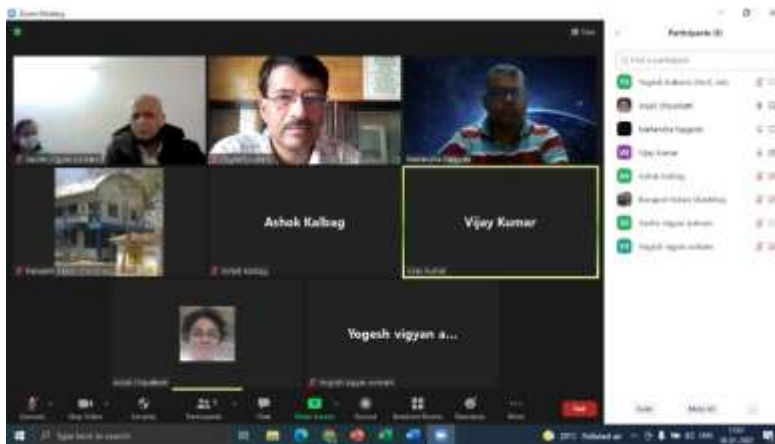


ATL session @ Guntur

DIY lab Pune updates: We have to stop off line classes due to COVID advisory. We have conducted two sessions on Otto block coding (8th January) and fabrication of automated switch (22nd January) as their weekly activity class. Pooja is also visiting IBT school students and helping them in their project at home.

I] Other tit-bit:

- i. **IIE Crises update** : Retd.Judge Mr.S.D Gokhale joined IIE on 7th Jan as an Administrator on the direction of Bombay High Court. This started financial activities in the organisation. We are thankful for all our supporters especially M/s Praj Foundation, individual donors – Mr.Chaitanya Nadkarni, Mr.Ashok Kalbag, Dr.Yogesh Kulkarni and many others for providing financial support in the financial difficulties. We are also thankful for individuals for donating us through online DanaMojo platform.
- ii. We are thankful for our donors for their support : Mr.Anil Saldhana, Mr.Koustubh Mehta, Mr.M V Kotval,Mr Rohit Bansal, Mr.Nandkumar Mahajan, Dr.Anil Date
- iii. Yogesh gave presentation of different program of Vigyan Ashram with the support of La foundation to their partners in Camroon on 21st Jan.
- iv. Yogesh gave valedictory talk in a Technofest conference at Kaveri college on 19th Jan.
- v. VA Management Committee (MC) meeting was held on 30th January through virtual mode. Meeting was attended by Mr.Ashok Kalbag, Mr.Vijay Kumar, Mr.Mahendra Rajgude, Mrs Anjali Chipalkatti,Mr.S.D.Gokhale (IIE Administrator), Dr.Yogesh Kulkarni, Mrs Pallavi Shanbag. Important project like technology development plan under DST support, installation solar grey water recycling @ Dingarajwadi, construction of agriculture classroom etc along with administrative issues were discussed and decisions were taken during the meeting.
- vi. Mrs.Archana Kulkarni conducted a 'Yoga' training session for DBRT students @ 3rd January. Students practiced various 'Yogasana' poses while learning science behind physical-mental fitness.
- vii. Weather record – Rainfall of the month -0 mm (Total: 650.98 mm) ,Max temp-39.00 °C, Min Temp – 11.00 °C , Humidity – NA % , Water height in well– 7.10 M.
- viii. Energy consumption record- Electricity unit – III Phase -1625 units , I Phase import- 243, Solar generation- 1812. DG used – 00.00 Hrs. Quality of power : NA
- ix. Animal Husbandry section update – Milk production – 347.00 Kg, Poultry –NA, Goat- NA\
- x. Biogas produced-27.02 M³ (Dung used- 625 Kg), E-rikshwa uses- 860 (Electricity cost- Rs.XXX)
- xi. Online visitors: www.dsttara.org – 909 (New visitor-820 Repeated- 89), www.vigyanashram.com – 988 (New visitor-796 Repeated- 192)



VA-MC meeting

JJ Data Report: https://docs.google.com/spreadsheets/d/1VqlArN2jtW1_3kCdWQVgJQCh8-oPUGY9/edit?usp=sharing&oid=101141840668207826730&rtpof=true&sd=true

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

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

Photo Gallery:



Dry fodder collected from our farm. End of season



DBRT students repaired washing machine @ Ladies hostel



DBRT students contract : Toilet painting



Shramdaan : Preparing sport ground on campus



Team Vigyan Ashram on 26th Jan 2022