

Vigyan Ashram Status Report

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A] Vigyan Ashram participated in Bhartiya Vigyan Sammelan

VA participated in 5th Bharatiya Vigyan Sammelan and Expo (BVS) @ Ferguson college during 11th to 14th May. We have displayed technologies like Rice De-husking machine, Interactive Fab dome, XYZ plotters (rangoli machine) in the exhibition. We have also displayed information about various courses at VA. We have also partnered with BVS for idea completion 'Our problem... my solution'. We have offered mentoring and prototyping support to 2 best ideas in our Fab Lab.



B] Entrepreneurship Development Program :

We have conducted 4 Days entrepreneurship training program at Pabal to provide business modeling, design methodology, financial assistance and technology incubation for 20 candidates from 18th to 21st May 2017. During the workshop participants worked on their business ideas and made business plan. We have external experts from MCED, RangDe, 111Startup guiding students in their task. Details are on <https://ruralstartup.wordpress.com/>

C] Soil testing Lab : Our Soil analysis lab is now registered under National Soil Health card mission scheme of state government. Under this mission our lab will analyze 3890 soil sample from Pabal circle. These samples will represent 15505 individual samples. The soil samples will be collected by agricultural department from 12 different villages.



D] Workshop on 'Public Biodiversity Register and Marathi Wikipedia Development at IBT School' was conducted at JPNC on 8th & 9th May 2017. This workshop was organized under the guidance of Dr.Madhav Gadgil & Dr.Vijay Edlabadkar. We are targeting more biodiversity registered from IBT schools in coming year.

Mr.Subodh Kulkarni conducted session on editing on Marathi Wikipedia. Participants made Marathi wiki page of their own village. More information on

<https://mr.wikipedia.org/s/3ppm>



Instructors Making Map of Village

E] Fablab camp :

We have organized Summer holiday-Fab Camps at Pabal and at JPNC,Pune. These events were promoted using social media and we have got good response from students.

- a) @ Pabal : 25th May to 27th May: 19 students participated in the training. They learnt basics of 3D printing, laser cutting, 3D scanning, 2D/3D designing and electronics part including arduino and programming. They made projects in groups using Fab tools viz. Home automation system using mobile, Motion sensor based light, soil moisture alarm , RGB led control through Mobile Bluetooth, LDR based road signals etc.
- b) Fun with Electronics @ JPNC,Pune : 8 May to 11 May 2017 : 7 students
- c) Fun with Electronics @ JPNC,Pune : 24th May – 27th May 2017 : 7 students



F] Maker Tour visit : Lucas and Marie from organization MAKERTOUR (<http://www.makertour.fr/en/home/>) are documenting Maker Spaces around the world. They visited Vigyan ashram fablab from 24th May to 26th May 2017. They interviewed many students and users of the lab. Soon they will be posting them on their website.



G] Fab-academy 2017: Fab Academy course is progressing well. Due to summer, Temperature in the Fab Lab is crossing 40^oC. To beat the heat and operate the machines, Fab Lab is working overnight and open for almost 24hrs. A session by Dr. Milind Bhagwat was organized on 16th May on Networking and RFID.

Ms Cindy Kohtala (Fab Lab – Finland) wrote a blog on her stay at VA. It is available on : <https://blogs.aalto.fi/makerculture/2017/05/28/my-week-at-vigyan-ashram-fablab/>

HJ DBRT progress: DBRT 2016-17 will get completed in June. All students are busy in completing their projects and assignments. Highlights of the month are :

a) NIOS exam for DBRT old batch was conducted on 5th and 6th May. 13 students have given the examination.

b) Food lab has conducted pickle making training for 10 villagers. They were given training on making 7 different types of pickles, packaging etc.

c) Ms. Agathe and Eva, both intern from France are conducting session with Girl students in Bosch Bridge Training program. Topics covered are communication skills, writing blog and writing resume. They will be in VA for one month till 9th June.

d) Fab lab for DBRT: DBRT students went through 3D printing and arduino training. They printed their 3D scanned objects on 3D printer.



IJ Entrepreneurship Accelerator : Following of our alumni started their enterprises this month.

a) Mrs. Ulka Jagadale started Shavani Coaching and also started general stores. We had supported her to make business plan in STED training Dec. 2016 and learnt about Business modelling, financial inclusion etc. Location: Aditya Nagari, Krishna Nagar, Satara

b) Mr. Dinesh Kamalkar Mendadkar started Poultry business with 2000 birds. Location: Village Kube Tal. Roha Dist. Raigad; Investment: Rs. 2,75,000/-

a) Sunil Lalit Rao Deshmukh own Vaishanavi Transportation services which transports

coal to and from steel companies. He started this company with his friend in partnership but did not form any legal entity. In December 2016 he attended STED training program in Vigyan Ashram, under which he got support and guidance to register his business and maintain account books.

Location: At Sanjaymaldiv House Vardhman Nagar Bhorgaon Meghe Wardha 442001



Entrepreneurship Training Program

He started this company with his friend in partnership but did not form any legal entity. In December 2016 he attended STED training program in Vigyan Ashram, under which he got support and guidance to register his business and maintain account books.

IJ IBT Updates: – Schools are closed due to summer holidays. Therefore IBT team was busy in doing planning for the instructor training and activities in coming academic year.

a) Sachin represented VA in the meeting on 'introducing vocational education in secondary schools' organized by Education department on 25th May at Balbhavan, Mumbai.

b) IBT Team did mapping of activities with school curriculum from 5th to 9th std. A meeting was held with MKF on 30th May.

c) Summary of IBT in 2016-17 : Following is the quantitative information of IBT program :

Sr.No.	Particular	Maharashtra	Chhattisgarh	Boys	girls	Total
1	Number of IBT schools	95	28			123
2	Students			7057	5293	12350
3	Number of IBT districts	21	3			24
4	Number of villages benefited	440	120			560
5	Value of community services	3800000	190000			3990000
6	Fee collected	2470000	0			2470000
7	No of enterprises started by instructor.	11	6			17
8	No of Instructors Trained	392	108			500

KJ Update - Technology development & Design innovation centre :

Following is short update on some of the current project at DIC and Core support project.

i) Bio-drum

Aim: To develop aerobic decomposer for mineralization of urban organic waste.

Status:

- Drum was operated in VA Pabal with about 5 kg of garbage per day with timer set with 6 cycles of 1 min each. 5 kg per day cycle could be operated after shredding of garbage and use on culture developed by Inora. The reduction in the weight was 40 % when no shredding was done, and no culture used. 50% weight reduction was seen when culture was applied. 60 % weight reduction was possible when both shredding and culture was used.
- The technique was used to treat the municipal garbage collected in Saswad. Eco-man machine with capacity 1MT was used. 3 containers of wet garbage were charged machine was operated 5 times a day. Temperature of system was set to 35° C, Inora microbial culture was used as well as humidity was maintained. 400-425 kg black cake was obtained in 48 hrs. This was staked in piles of 1by 1 meter and height of 0.4 meters. The temperature of piles was found to be rising and was close to 55° C for more than 15 days.
- New version of bio-drum (V3) with 235 lit volume is under prototyping stage. 1.5 HP motor is procured and fabrication work is underway.



Bio-Drum

Action Plan: Testing of quality of manure. Real life trial of V3 version

ii) Gray Water Treatment

Aim: To design gray water treatment solution for VA boys hostel so that same can be used for toilet flushing and agriculture

Status: Hyacinth has grown covered entire pond no 3. Also on part 1, water is used for fodder grass. The results are encouraging. Larva growth is controlled by covering water layer with engine oil. This didn't affect growth of hyacinth.

Issue: Water still has foul smell and larva growth is evident

Action Plan: Use hyacinth in biogas.

iii) Dehumidifier/ Dryer

Aim: To design low cost dryer for vegetable drying at temperature below 40° C this will qualify FDA norms.

Status: Dome structure is ready full load trial taken by using chopped ginger 20 kg. During trial the humidity was higher close to 70 % and drying took longer time. Some fermentation was also evident.

Attempt to dry gapes were futile fermentation has preceded over drying due to higher sugar content and the shape close to sphere.

Issue: At full capacity system is not performing as expected. Needs higher air flows through and or dehumidification with silica.

Action Plan: Test the drier and maximum possible loading.

iv) High density fish farming

Aim: To develop self-sustainable system of high density fish farming.

Status: Aquaponics trial was ended on 13th May. We have harvested all fish to end trial due to water shortage and completion of season. Final fish average weight recorded was 208 gm/fish. This time fish was grown to marketable size but time required to achieve growth was high with very high FCR. The major bottleneck was lower water depth and low water temperature during 4 months of winter season. We are planning to re-design and start new trial with coming monsoon season.



Drying Ginger in Dome Dryer



Issue: Economic feasibility is not possible for Tilapia at Pabal. Water availability is good from July to March. System sets up by August. November to January gets badly affected due to lower temperature.

Action Plan: Will be made in the month of June.

v) Rava Roster

Aim: To develop self-driven system to make use of solar Scheffer.

Status: New motor with ½ HP capacity and gear box was mounted. The system is working reasonable.

Issue: Need proper belt. Real life trial could not be conducted due to non-availability of intense sun shine.

Action Plan: Trial after solar tracking system is ready.

L] Students volunteers & DIC fellows –

i) DIC students Meghraj is placed @ waste recycling unit of Saswad Municipal Corporation to conduct trials of bio-drum.

ii) 4 students from College of Agriculture Engineering , Vaibhavwadi (Sindhudurga district) for 3 weeks duration internship project.

iii) 4 Students from IIT-Jabalpur joined on VA on 25th May for 2 month duration internship project.

M] Other tit-bit –

- I. Yogesh attended meeting organised by NBRIT 'Network project on Micro Solar Dome(MSD)' at New Delhi on 4th May. Vigyan Ashram will be partner in installing MSD in tribal household in Maharashtra & CG. Training program on installation of MSD will be held for NGOs in Southern India at VA- JPNC.
- II. Yogesh presented concept note on establishing 'Rural Technology Business Accelerator' at Pabal in Executive committee meeting of Dept. of Science & Technology at Lucknow on 29th and 30th May.
- III. Yogesh visited HESCO, Deharadun on 23rd May to understand technologies developed by them especially for mountain areas.
- IV. Weather record – Rainfall – 8.5mm (Total 341.67 mm) ,Max temp-46°C, Min Temp – 17.3°C , Humidity – 38%, Water height in well – Dry .
- V. Energy consumption record- Electricity unit – III Phase - 1109, I Phase - 482. Quality of power : Number of interruptions : 67, Normal voltage : 76.17 % , No supply : 23.08 % , low voltage : 0.16 % , high voltage : 0.00 % , Data not recorded : 0.6 %
- VI. Biogas consumption – Dung used-524 Kg, Gas produced- 39.524 m³.
- VII. Total visitors to www.dstara.org – 799 (New- 654, Repeated –145),www.vigyanashram.com – 1645 (New visitor – 1092 Repeated-553); www.vigyanashram.wordpress.com – 5984 (Visitor-2123 Viewers-1007)

Data Report:

https://drive.google.com/open?id=0B_Jk2xLqAXjcYWI1dEp5SDNacDA

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Photo Gallery:



Fun with Electronics @ DIY Lab



Fab Camp @ VA



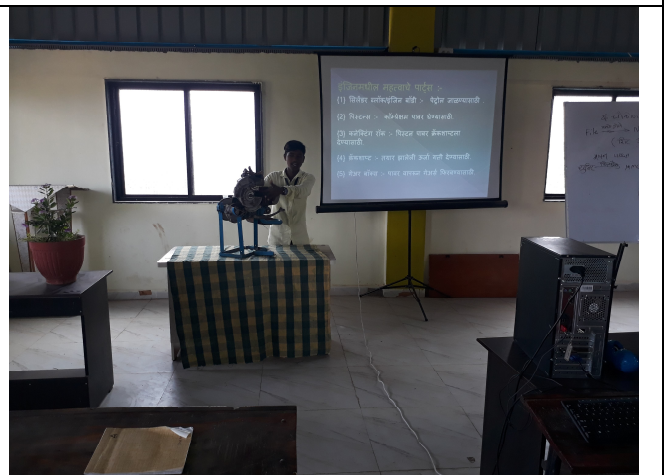
3D printing training with Amitraj



Dr.Madhav Gadgil guiding IBT instructors



Yoga class for DBRT students



DBRT students seminar in progress

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

Our sites : www.learningwhiledoing.in , www.dsttara.in , www.vigyanashram.wordpress.com ,

www.vadic.wordpress.com , <https://ruralstartup.wordpress.com/>