

Vigyan Ashram Status Report

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In this issue

- Inauguration of 'Advanced IBT' lab @ Tathwade school
- Sanitary pad incinerator: Order completed
- DBRT students took order for fabrication of IBT lab setup
- Raising Black soldier fly on society waste mixed with compost culture gives promising results

A] Inauguration of 'Advanced IBT' lab @ Tathwade school:

IBT tools inventory is getting updated every year. Now we have included 3D printers, computers, electronics and micro controllers in the upgraded list of tools for IBT program. IBT lab @ Narsinha Vidyalaya, Tathwade (Pune) got upgraded with new tools and machines. IBT lab was inaugurated on 7th September at the hands of Mr. Rajen Tripathi (Principal director project LTI), Mr. Wasim Shaikh (CSR Manager) and other team members. DIY lab team installed 3D printer in the school and conducted introductory workshop for students.

On 7th Sept, IBT students exhibited the project done under IBT program and shared their learning with the guests.



Inauguration of IBT Lab



3D printer training of IBT instructors

B] 3D designing and printing training: We have upgraded IBT facility in 22 schools. These schools got 3D printers and electronic setup. Training of instructors from these schools were conducted at Pune & Pabal on 20th & 21st September 2022. Total 21 instructors IBT schools trained on use of 3D printers as educational tool. Training program was supported by LTI, TATA Technologies and SCHAEFFLER. Training was simultaneously conducted at DIY Lab, Pune and fab lab at Pabal to ensure maximum hands on training on printers. (Stars forum)

C] Sanitary pad incinerator installation:

Sanitary pad incinerator is successfully installed at Bhagwanrao Napate Institute of healthcare education (Paud, Pune) girls hostel on 12th September. It's LPG based automated incinerator with 60 pad per cycle (12-15 min) capacity. It is completely burning sanitary pads without any black-smoke formation with fuel cost of Rs.1.20 per pad.



Presently incinerator is used for 120 pads per day without any major difficulty. We are thankful to Bhagwanrao Napate Foundation for first order & feedback of unit. Design Innovation Centre (DIC) students are further working on perfecting minor modifications in technology. (VATF)

D] DBRT students took order for fabrication and IBT lab setup :

IBT program is getting started in 18 schools with the financial support of CSR partners TATA Technologies, Schaeffler India Pvt Ltd and Mahle Engineering Services Pvt Ltd. IBT lab requires different work tables, racks, electrical wiring etc. It is decided to get this work done as a part of students practical training. We have decided to engage school students through activities like wall painting, electrification & fabrication of required furniture, installation of tools & equipment's etc. Some of these works requires specialized skills and therefore we have decided to give work on contract to DBRT students. Team of DBT students, IBT instructors & schools' students are formed to complete work. The work will continue for 2-3 months. Following are some the highlights of student teams work in September –

- DBRT team completed initial site survey, prepared layouts, quotations, work-orders etc.
- DBRT workshop team fabricated two sets furniture (working table, welding station, kitchen desk, soldering table, tool boxes, machine mounting stands) and got it approved from IBT dept. It is now installed in two schools.
- DBRT electrical student team completed electrification work of 3 schools.
- Students completed work for 3 furniture sets worth Rs.12907/-. Students earned community service of Rs.19811/-. (VA, Stars forum,VATF)



E] DBRT student learning updates: Following are other highlights of DBRT activities: -

- i) Workshop section: Students fabricated 2 units 'wheel barrow' against order. They learnt basic plumbing skills while installing a water pump & solar water heater in hostel.
- ii) Agriculture section: In this section students learnt basic farming skills like seed treatment, pest-disease management, fertilizer application etc while managing cucumber crop in polyhouse. They harvested 45 Kg of cucumber & 22 kg Udid (black-gram) as produce. Students also learnt making of humidity-chamber based nursery while making 300 saplings of mulberry plants. These plants will be used as perennial fodder for animal husbandry. Students learnt poultry farming skills while started new batch of 130 chicks of Kaveri birds. In dairy farming, gauri cow delivered new female calf. Students are learning post-delivery rearing practices & milking skills while taking care new calf.

iii) Training on washing machine repair: We had invited a practicing technician Mr.Nandkumar Patwardhan on 13th Sept to conduct session on repair of washing-machine. Student repaired 2 washing machines as a part of practicals.

As a part of community service activity students did electrification work of Agarwadi Primary School and earned a community service of Rs.1200 while learning electrification skills.

iv) Home & Health section: Students prepared Moringa peanut chikki (8 kg) & Linseed peanut chikki (8 kg) for Sahydri School with total billing of Rs.5601.00. They also processed 36 kg bread flour for learning bread & cake making, prepared Tamarind sauce (5 kg), Chilly chatani (3 kg) while earning a community service of Rs.2610.00

v) Fab-lab training: DBRT student Akash, Ganesh, Om learnt basics digital fabrication skills. They worked on making 3 D printed illusion hologram object. They also repaired digital bell and also working on Arduino programming of ammonia sensor-based toilet exhaust fan.



F] Workshop on development 'teachers handbook' @ Lucknow:

A collaborative workshop for development of 'Handbook for Teachers for Learning while Doing Program in Hindi' was conducted during 27th to 30th September @ Lucknow (Uttar-Pradesh). Workshop was attended by 20 schools teachers as local resource person. Dr.Yogesh Kulkarni, Ranajeet Shanbhag, Suyog Wargade, Pallavi Shanbhag, Pranav Pujari and Hrishikesh Kulkarni participated in workshop as Subject Matter Experts. Total 44 activities as per UP syllabus and in line with NEP2020 were designed. (Stars forum, VA).



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

i) Black-soldier-fly (BSF) based composting: Trial on compost culture + BSF based housing society composting system showed encouraging results. Trial showed that BSF can be reared directly in composting rack for faster & odor free composting of kitchen waste. In September, 110 kg of waste was processed with 330 gm (5 days old) larva in 15 days. Separation of full grown BSF larva from rotating rack composter is very tedious, so we are working on developing a plastic rack-based system. Details of project can be found on- <https://vadic.vigyanashram.blog/?s=Black+soldier+fly>

ii) Goat weighing scale: Suhas & sumit started fabrication of 'RFED based automated goat-weighing scale'. Prototype unit was built & tested as a fab-academy project last year. New version will have goat standing platform (300 kg) capacity, RFID tags & data recorder for Pabal campus goat farm.



BSF hatching process

iii) Automated entry-gate: Basile Pasqual started development of app for automated entry-gate (water balance) project. Gate was operating on google assistance platform earlier but due to technical limitation and user convenience , we are developing independent app for system. His project details can be found on- <https://vadic.vigyanashram.blog/2022/10/21/48517/>

iv) Solar powered grey-water recycling system (INSIC): Solar powered grey water system is commissioned at Kanersar village. Chemical Oxygen Demand (COD) of raw water was reduced from 2700 ppm to 250 ppm (permissible range by PCB) in 48 Hr air-blowing. Presently we are testing system for filtration rate/ day with air blowing & water circulation alternations.



v) Organic fertigation for hydroponics system: We are doing different experiments with hydroponics. Kartik studied applicability of fortified bio-gas slurry for hydroponically grown spinach. He found good result for magnesium fortification. Mrunal & Vishal got encouraging results for human urine + vermiwash based hydroponically grown brinjal plants.

vi) Akshada & Sonal prepared 300 units of H₂S water-testing bottles for distribution to farmers, IBT schools & grassroot organizations.

H] Fab-Lab for tribal area update:

i) Fab-lab Narmadalaya (Lepa punarvas, Madhya-Pradesh) conducted 3 training workshops for school students benefiting 108 students. They had conducted three workshops for college students (54 numbers)

ii) Fab-lab Govardhan Skill Centre (Palghar, Maharashtra) conducted two workshops benefiting 100 students.



Training @ Narmadalaya

iii) On 4th September, Shri Vikramaditya Singh (Secretary, SC/ST Commission of Madhya Pradesh) visited, Fab-lab

Narmadalaya. He appreciated facility, technical capabilities & enthusiasm of local team in implementation of project.

I] Entrepreneurship Development Program (EDP) update :

- EDP training session on 'Advance goat farming practices' was conducted on 17th –18th September. Training was attended by 13 farmers to learn skills in selection of goat breeds, feed management, cultivation of azolla, silage making, vaccination etc. Ganesh Pingale and Bhanudas Daundkar conducted technical sessions while Yogesh Onkar guided participants on preparation business plan, government schemes etc.
- On 14th Sep, one day orientation on 'technology based rural enterprises' was conducted for 42 farmers & SHG members from 'Gadkwadi' village (Shirur block). These farmers are supported by 'Raindrop foundation' for adopting sustainable farming technologies.
- Yogesh Onkar visited '15th Yellow Ribbon' fair on 19th September held at Pune to meet 100+ NGO, farmers, artisans' & likeminded organizations & entrepreneurs working in rural development.

- An enterprise registration support provided to 5 budding entrepreneurs (Udyam Certificate-2, FSSAI Licence-1, Shop Act-1) (VATF)

JJ IBT Maharashtra & Uttar-Pradesh updates:

IBT School coordinator training program: IBT school coordinator's training program was conducted on 16th and 17th Sept at Navalakh umbre (10 schools) and on 30th Sep 2022 at Pabal (6 schools). Training aimed to discuss IBT implementation plan, its relevance with NEP policy, financial support structure by CSR partners etc. Training was supported by Scheffler, MAHLE Engineering services and TATA Technologies Ltd. CSR division (VA, Stars forum).

Highlighted school activities:

- All tools were procured for 10 newly started schools under Schaeffler India and TATA Technologies CSR support.
- Students at Chatrapati Sambhaji Vidyalay, Tulapur fabricated a tool box & partition cabin for agriculture nursery in school. Total cost of work was Rs.12000.00.
- IBT students from Shirval School prepared and fixed 6 dustbins on school play-ground. They used plastic buckets & metal frames collected from school scrap for dustbin fabrication. Total cost of their work was Rs. 2555.00.
- IBT students from 8th class of Gawadewadi school's 3D printed 'name-plate' for school headmaster.
- Class 9th students of SDMN, Vidyalaya (Chikhali) fabricated 2 units of 'tree guard'.



IBT Co-ordinators training



IBT Uttar-Pradesh updates:

- During September 1512 students including 180 out-of-school students participated in IBT learning activities in 56 schools of 15 districts.
- Schools interchanged IBT lab tools for multi-skill training of students. Lab shifting work was completed in all labs.
- New instructors are recruited in 13 labs and trained for conducting activities.

KJ DIY & Atal Tinkering Lab (ATL) support program:

i) Do-It-Yourself (DIY) lab conducted 3 training workshops -

- Make your own puzzle by using codeblocks in Tinkercad

and 3D printing : <https://youtu.be/n2ZYzOTwCjY>

- Making remote controlled vehicle using papertronics :

<https://youtu.be/9HDctN26b90> ;

- Making of 3D printed lamps for Diwali : <https://youtu.be/50Bi3EZggwQ>

Team is preparing for Diwali workshops : Youtube Link for Diwali workshop teaser videos :

<https://youtube.com/shorts/L8NSMw7NrY?feature=share>

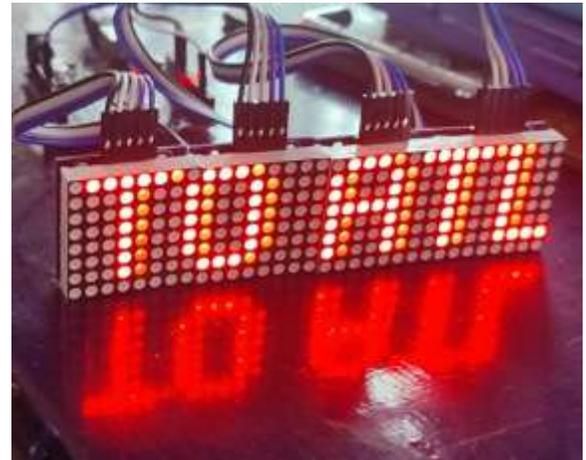


DIY lab activities

ii) A brainstorming discussion on 'composting of kitchen waste' was held at DIY lab on 2nd September. Session was attended by Mr. Ashok Tanugade (Marathi Vigyan Parishad, Pune), Anil & Hamsa (Proearth Pvt Ltd) and Mrs. Vaishali Ghokhale (Earthing, Pune) to design collaborative plan for further action.

ATL @ Andra-Pradesh :

- 15 ATL lab instructors were trained on dashboard filling. in designing hands-on activities, record keeping through etc.
- On 23rd September online session was held for all ATL school administration and lab instructors in the state. Online session viewed by 1675 participants.
- Taken review of all 20 schools on parameter set for becoming model ATL.
- 3D printer was repaired in two school.
- Preparation for State level workshop in October is in progress.



Project @ Chirimamilla School

L] Other tit-bits:

- Under distance learning library (ASTI project) 5 video training modules of Fibre Reinforcement Plastic (FRP) course were completed.
- Sumith visited EV India expo (7th Sept @Noida UP) and Ranajeet visited Asia Agri Expo (11th Sep @t Gandhinagar) to explore new technologies of sector.
- 94 students from Seva Foundation & BSITS (Wagholi, Pune) visited Pabal campus to learn design thinking methodology & research activities.
- Agri classroom slab was done on 24th Sept. Foundation work of food lab was started.
- Unicef appointed external auditor made audit and due diligence for IBT program in Lucknow on 5th and 6th Sept (Stars forum)
- Wikipedia : Books scanned : 6 (1376 pages) ; Sewing lab : 3 students completed the course, 4 students are undergoing sewing course.
- Weather record – Rainfall of the month – 271.56 mm (Total: 767.80 mm), Max temp-36.00° C, Min Temp –19.00° C, Humidity – 66%, Water height in well– 3.00 M.
- Energy consumption record- Electricity unit – III Phase -1277 unit, I Phase import- 63, Solar generation- 2279.00. DG used – 10.30 Hrs.
- Animal Husbandry section update – Milk production –584 lits, Expenses: Rs.16,148 ; Per lit cost of production is Rs.27.5/lit
- Biogas produced-31.66 M³ (Dung used- 791Kg)
- Online visitors: www.dsttara.org – 771 (New visitor-693, Repeated-78), www.vigyanashram.com – 975 (New visitor-796 Repeated-179)



Sumit visited EV India Expo

MJ Data Report: <https://tinyurl.com/muamwjjv>

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Photo Gallery:



Installing Solar panel by DBRT students



Agri classroom slab (SPA foundation)



Food lab activities



Hero of the month
Sujata Pingale
(At.Post Gulani),
Stared poultry
with 2000 birds.
'Shantai Poultry
Farm'.



EDP : Farmers orientation



DBRT students @ market to purchase material

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