

Annual Report
2021-22

Vigyan Ashram

(A centre of Indian Institute of Education)

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Introduction:

Team Vigyan Ashram is pleased to present 'Annual report' for the FY 2021-22. This year started with second wave of COVID pandemic and also witness life coming back to normal after July 2021. We are thankful to our staff members, students, volunteers, financial partners and donors. It is due to their support; we are able to maintain momentum of Vigyan Ashram's program during pandemic.

After pandemic, Vigyan Ashram also suffered due to legal disputes between board of trustees of Indian Institute of Education (IIE). Vigyan Ashram is an autonomous center of IIE and all funds for Vigyan Ashram are routed through Indian Institute of Education. Unfortunately, all bank operations of Indian Institute of Education were freezed between Sept'21 – Jan'22. But thanks to strong support extended by our funding partners and individual donors, we were able to continue the pace of all our programs.

Vigyan Ashram pays tribute to Dr. Sunil Agarwal (Scientist, Dept of Science & Technology), who passed away in April 2021 due to COVID. He was a good friend and mentor of Vigyan Ashram. It was great loss to us.

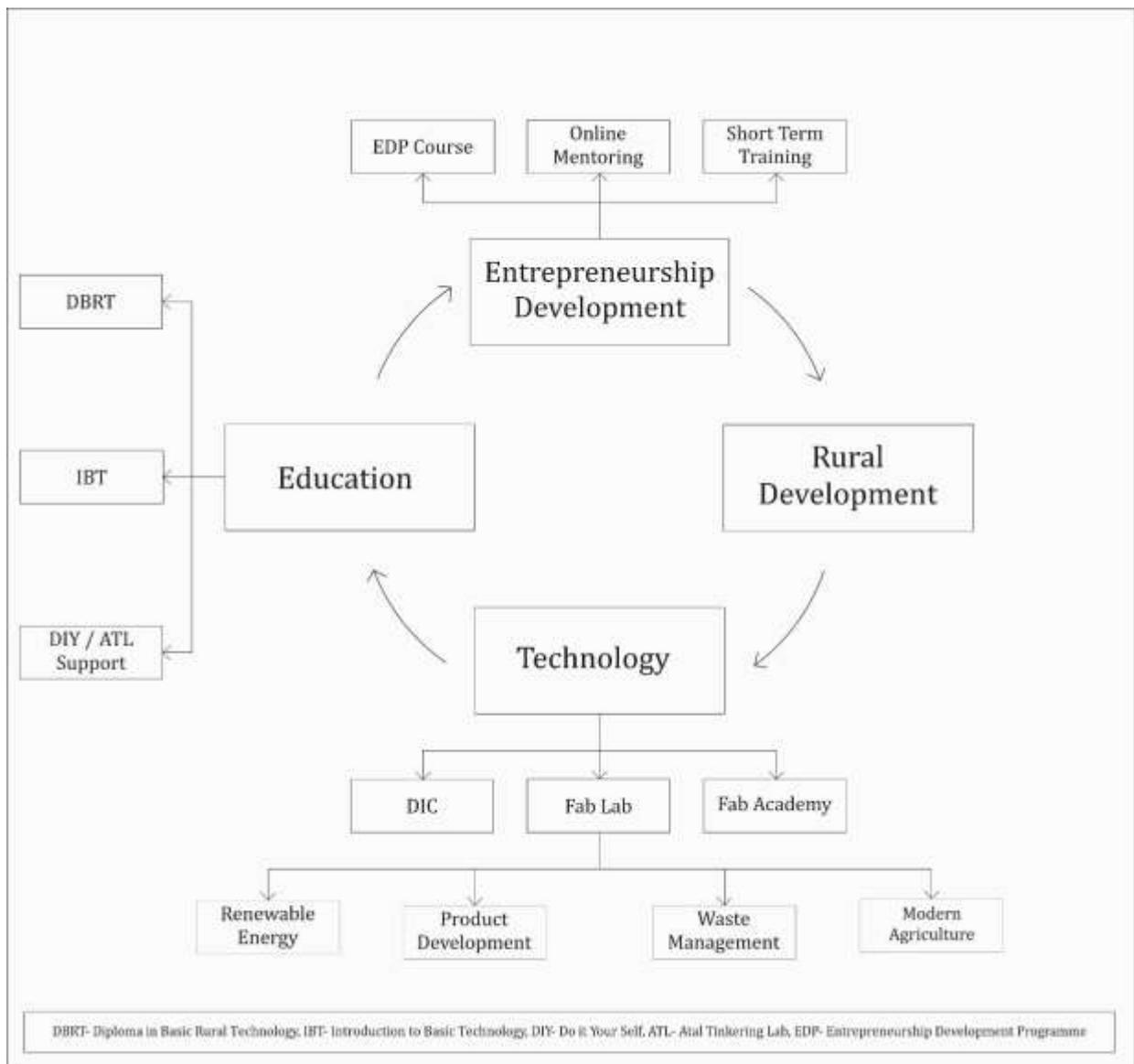
In all year 2021-22 was very challenging and eventful year. It has forced us to make many changes in our functioning and many of those changes will remain with in future. Its our pleasure to share with you, progress made by Vigyan Ashram during 2021-22.

Educational Program :

Educational program of Vigyan Ashram is based on 'Learning doing while' philosophy. Providing community services, multi skills training and hands on experience are basic features of all educational program of Vigyan Ashram.

1] Diploma in Basic Rural Technology (DBRT): DBRT is one-year full time residential program based on philosophy of 'learning while doing'. It's a multi-disciplinary skill training course with emphasis on developing self-employment at local level. Program is accredited by National Institute of Open Schooling (NIOS). DBRT 2020-21 batch, graduated on 30th July. 51 students (out of 57 enrolled) successfully completed their course and placed for internship. DBRT 2021-22 batch started from 1st August with 54 students including 4 girls. This year we have students from Telangana, Odisha and Maharashtra states. We are thankful to ASHA for Education, Praj Foundation, Eaton Foundation and individual donors for supporting DBRT program.

2] Design Innovation center (DIC) : Design Innovation Centre (DIC) is offering a 'Designing a solution' program for graduates from any disciplines viz. science, agriculture & engineering, Bio technology etc. DIC offers short term internships & fellowships and engage them to work on real life problems. During 2021-22, 32 students enrolled for program to work on various technology development project in the area of renewable energy, soil microbiology, product design etc. For more details on projects & students profiles please visit- [DESIGN INNOVATION CENTER \(DIC\) | Vigyan Ashram](#) . DIC program is supported by Eaton India foundation.



3] Fab Academy Program: It is an advanced diploma in digital fabrication conducted by Fab Foundation. It's a 6 months program with emphasis on hand-on training in rapid prototyping & digital fabrication. The course aims to train students on 'How to make almost anything'! Dr. Neil Greshfeld (Professor, MIT, USA) conducts the program through video conferencing on Wednesday. Session is followed by hands on practicals at local Fab lab under supervision of local instructors. This program is useful for innovation center managers or those who want to start their enterprises. In 2021 batch, 5 students successfully completed their course. Details of their work is available on <https://fabacademy.org/2021/labs/vigyanashram/> Fab academy, course for 2022 was started from January 2022 with enrolment of 7 students. They will complete their course in June 2022. Details are on <https://fabacademy.org/2022/labs/vigyanashram/>

4) Introduction to Basic Technology (IBT) :

IBT program is implemented from class VIII-X std. In the IBT program, student learns various technologies useful for their communities. IBT is recognized as pre-vocational training program Level1 and Level2 under National Skills Qualification Framework (NSQF). It is also named as 'Multi skill Foundation Course (MFSC)' or 'Multi skill Assistant Course (MSAT)'.

- i) VA is implementing IBT program in 140+ Schools in Maharashtra, Chhattisgarh and Uttar-Pradesh State benefiting over 15000. An online monitoring portal www.myibtschool.com keeps record of progress of the program & showcase various students activities in these schools. During 2021-22, we have done pilot of introducing digital fabrication (3-D printing) in schools.
- ii) Technovation Exhibition of IBT school project was organized on 5th March at J.P Naik Center for education & Development, Pune. Selected 30 projects done by IBT students were exhibited during the exhibition. Exhibition was also organized online and can be visited on : <https://technovation.online/>
- iii) Vigyan Ashram has fabricated 500 units of 'sanitizer dispenser stand' and distributed to various schools through financial support of LTI First Step-CSR initiative. A 'Happiness Kit' containing school bag, sanitizer bottle, facemask, Thermometer, Note books, Pen etc was distributed to 365 students in LTI supported IBT school.
- iv) We have introduced IBT program in 60 schools of Uttar Pradesh with the support from UNICEF (Uttar-Pradesh), State Educational & Labor Department. During FY 2021-22, IBT labs are established in all schools. The program will benefit 4500 school dropout students in the state.

IBT program is supported by L&T Info Tech Ltd, Praj Foundation, TATA Technologies, Unicef.

5] Do-It-Yourself (DIY) Lab : DIY Pune operations resumed after 2nd wave of pandemic. DIY lab started conducting regular online-offline workshops. We have also provided mentoring to ATL labs, IBT projects and also in organising Technovation student exhibition. DIY lab has benefited 214 individual/ school students through different training workshops.

DIY lab hosted workshop to repair oxygen concentrator on 30th Oct in collaboration with Makers Asylum. We have tested and did fault finding of 20 oxygen concentrator.

6] Support to Atal Tinkering Lab (ATL): A project on strengthening of Atal Tinkering Labs (ATL) in Chhattisgarh & Andhra-Pradesh state is started with the support of UNICEF. This project aims at fostering design thinking & tinkering ability of ATL lab students while providing capacity building support to school teachers. In 2021-22, we have provided online technical support provided to ATL labs Chhattisgarh. Total 46 online sessions were conducted benefiting 87 labs with cumulative participation of 8720 students, 510 teachers in Chhattisgarh.

Project to support ATL in Andhra-Pradesh was formally started in October 2021. Till March 22, we have conducted 15 online sessions. We have also provided offline training & mentoring support to 20 labs of Guntur & Krishna districts benefiting 370 students & 40 ATL instructors.

Technology Development and dissemination

Vigyan Ashram believes in use of new technologies to improve productivity and efficiency of our work. We have worked on development of several real life problems. Students of various educational programs are given these problem as their academic projects. Following are some of the important technologies developed and under development at Vigyan Ashram

- Composting culture for agro waste composting : Ms Sonal shinde is doing research on new composting culture for agro waste composting. This project is supported by Department of Science & Technology (DST, Govt of India) under 'Young Women Scientist Scheme'. We have completed DNA sequencing of 11 fungi & 2 bacterium for agro-waste composting microbial culture. She has conducted field trials at 48 locations (farmers) while processing around 98 tons of agro-waste.

- Low-cost UV-light based water filter (disinfection) unit: New version of low cost UV water filter is successfully tested for its application. Filter works on UV-light based disinfection along with advanced membrane filter for removing physical impurities. Filter has successfully passed 'bactoscope' test with very less (11 W) power requirement. This filter can work on solar panel. We have fabricated 11 filter units and they are under testing with nomadic camps near Mukhai village.
- Solar dryer: We are regularly providing consultancy for Self-help groups and farmers on selection of appropriate solar dryer. A cabinet based solar dryer was fabricated and supplied against a specific requirement from fisher-women of Kudal (Dist-Sindhudurg, Maharashtra). Dryer has polycarbonate roof (70% heat penetration) which provides enhanced quality (colour & flavour retention) along with 13-15 % higher drying efficiency as compare to open sun drying. Dryer designed for easy on-site assembly with 1.67 M² loading capacity. It can dry 3-5 kg of fish in 8 – 9 Hr of drying time.
- LPG based sanitary pad incinerator: A new version of LPG based used sanitary pad incinerator is successfully tested. It has automated LPG burners with required safety protections. The household model can incinerate 5 pads/batch with just 15 gm of LPG @ cost of Rs.1.95 per pad (as compare to Rs.7.5 /pad on electrical incineration). We got order from nursing college hostel for incinerator with 60 pad/batch capacity. It is under fabrication.
- Battery power pack for E-Cycle: A retro-fit EV power pack is designed & fabricated for E-cycle with capacity to go for 100 km (40 % human assistance). The power pack is made up of Li-Po (24 v, 24 Amp-hr, lithium phosphate) batteries along with BMS (battery management system). A DIY manual for power pack design & maintenance of EV also published in Marathi & English.
- H₂S bacteriological test: H₂S is standard test for testing anaerobic (pathogenic *E.coli*) bacterial load in potable water. A standard operating protocol developed for manufacturing of H₂S strips so as to produce it at local level with lower cost.

Please visit <http://vadic.vigyanashram.blog/> for details of projects and other technologies.

Technology dissemination

1] Fab Village : Vigyan Ashram is trying to implement various technologies to make residential school in Mukhai a self-sufficient school in terms of energy, water and waste management. We have installed grey water system, solar dryer, composting, solar water heater and mini fab lab at Mukhai school. This project is supported by La fondation.

Vigyan Ashram has also partnered with Center for Technology Alternatives for Rural Area (CTARA, IIT Mumbai) for living lab project. Vigyan Ashram got two Electric Rickshaws for Pabal campus. These e-riskhaws are charged using solar energy. They are used for ferrying students, for ashram work and also visit to Public health center at kendur.

We have installed data loggers at polyhouse under living lab project. CTARA also supported us to installed biogas, 6KW solar PV system, gasifier system at Mukhai school. We are using these facilities for data collections and identifying research problems in implementing these technologies.

2] Fab-Lab @ tribal area: A proposal on 'Establishment of Fab Lab for Appropriate Technologies for Innovation & Training in tribal areas' is sanctioned by Department of Science & Technology (DST, Govt. of India) under Tribal Sub-Plan (TSB) scheme. Project aims at establishing digital fabrication labs at two locations. They will be installed at Nimar Abhyudaya Rural Management

& Development Associations (Lepa-Punarvas, Dist- Khargoan Madhya-Pradesh) and Shri.Nityanand Educational Trust (Hamrapur Galtare, Palghar, Maharashtra). Project will train local instructors & students in use of digital fabrication tools for livelihood generation. Project is in progress and labs will be established by July 2022.

3] Online Exhibition: Vigyan Ashram has launched online exhibition of its technologies and projects on 30th July (Anniversary of Dr.S.S.Kalbag). <https://vigyanashram.online/> More than 3748 people visited online exhibition.

We are thankful to Department of Science and Technology (DST- SEED division), Eaton foundation, La-Fondation, Savitribai Phule Pune University (SSPU), Fab foundation for supporting our technology development work. For technology development trials please visit www.vadic.vigyanashram.blog

Entrepreneurship Development Program (EDP)

EDP are very important activities at Vigyan Ashram. Output of EDP program are directly demonstrates impact of our training on generating new livelihood. Following efforts were undertaken in 2021-22.

i] StartUp Sarathi for budding enterprises: Under ‘StartUp Sarathi’ initiative, we are providing hand-holding & incubation support to budding enterprises in rural areas. Pre & post training support includes helping entrepreneur in obtaining required registrations -licenses, label / posters design, social media promotion, marketing linkage, fundraising etc.

In 2021-22, we have provided EDP support to 56 youth to successfully built their enterprises. More details on success stories & upcoming training programs can be found on [Startup Sarathi | Facebook](#)

ii] Distance learning library: with the support of Dr.Prabhu Trust, we are preparing skills training videos. Our aim is to build a digital library for large scale livelihood based skill training videos. These resources will be in the Do-It-yourself format and will be useful for technical training institutes to provide quality skills training. [The Skill Guru | Distant Learning Library \(theskillsguru.in\)](http://theskillsguru.in)

iii] Skill training programs for Technology-based Entrepreneurship Development:

Vigyan Ashram has conducted several trainings in online-offline mode. These includes awareness workshops, webinars and skill training. Following is summary of efforts made by EDP dept.

SN	Activity name	Results / participant
1	Number of rural enterprises established in 2021-22	56
2	Online boot camp & introductory training sessions	19
3	Online/offline Training Program conducted	21
4	Number of beneficiaries attended online training workshops / webinars	578
5	Number of beneficiaries attended on campus training (offline) programs	150
6	Hand-holding & incubation support provided to budding entrepreneur	75

Apart from above training, VA team also conducted training on demand, Faculty Development Programs (FDP) for college teachers, awareness workshops for Women self-help group, student alumni's NGO partners etc. Details of training are :

SN	Topic	Number of participant
1	Kitchen Garden Establishment 14 th & 28 th April for WSGH's of CORD (Himachal-Pradesh) & Rangsutra (Rajasthan)	70
2	DBRT students online meet for identification of opportunities in entrepreneurship development 13 th May	150
3	Orientation of digital fabrication 21 st to 25 th June at Pabal for faculties of Sanjeevani College of Engineering (Kopargaon)	3
4	EDP program of 2 nd Yrs engineering students of Sanjeevani College of Engineering (Kopargaon) @ 22 nd to 24 th November	17
5	EDP for WSHG at Maina Village (Dist- Panjim, Goa) @ 15 th & 16 th January in collaboration with 'Vanrai' organization	48
6	Faculty Development Program (FDP) for staff of Sanjeevani College of Engineering (Kopargaon) @ 14 th to 18 th February	58
7	EDP for WSHG at Navilliam village (Panjim, Goa) @ 16 th to 19 th February in collaboration with 'Vanrai' organization	28
8	EDP for WSHG at Mograj Village (Karjat, Raigad) @ 25 th to 26 th March in collaboration with 'Anubhav' Pratishastan (Katraj)	25

[Short term vocational training & Entrepreneurship development programs in Vigyan ashram are supported by - Asha for Education, Eaton Foundation, SPA Education foundation, INDUSA, PRAJ FOUNDATION and many individual donors. We are thankful for their support & continuous encouragement]

Infrastructure Development

i] New recreation center for boy's hostel: A new recreation centre is constructed for the boy's hostel. This is 400 Sq ft facility and have a small kitchen and indoor games, library facility. We have also prepared a playground for volleyball, Kabbadi etc. Now we have started construction work of the 'new agriculture classroom. We are thankful to ASHA for Education, SPA foundation and many individual donors for their support.

Important Tid Bits

i] Wikipedia project: Girl studying in computer sections are doing digitalization of copy right free books. They are also taking part in editing Marathi wiki articles. This year they have digitalized 9 books (2000+ pages).

Following are some of the highlights of their achievements-

- Books digitalized are Ranade Marathi dictionary (Volume I), 5 books of Samarath Vidya Arogya-Kendra (Nasik) and 2 volumes of 'Textile industry & Science' by Rajya Marathi Vikas Sanstha & Textile & Engineering Institute (Ichalkaranji).
- Participation in 'Proofreadthon-2022: VA team got 5 prizes in the competition and did 1741 proofreading in Marathi language.
- Ms.Komal Shambhudas achieved milestone of 2000+ wiki edits.

ii] Staff trainings, presentation & Awards:

- Dr.Yogesh Kulkarni received 'Samaj Shikshak Puraskar' from Matrumandir Shikshan Sanstha (Pune) on 4th August 2021.
- VA Fab-lab team participated in FAB CARE challenge during FAB16 international conference in August 2021. Team own prize for Exoskeleton for farmers & labourer in their daily task like spraying, grass cutting etc.
- Yogesh & Suhas participated as a resource person in the Faculty development program of Idea labs organised by AICET at COEP Pune, DYPIU and AKGEC Delhi.
- Ranajeet & Prasad conducted two sessions on 'Energy Self-sufficiency & entrepreneurship opportunity in renewable energy' and 'Application of solar PV & artificial intelligence technology for protected cultivation @ 'Winter School' training program @ College of Agricultural Engineering and Technology, Dr.BSKKV, Dapoli on 25th February.
- Dr.Yogesh Kulkarni is appointed as 'National Focus Group' member of a committee to prepare position papers on vocational education under New Education Policy 2022.

Donors and supporters:

We are very much thankful for financial support of many individuals and foundations. Following individuals have supported Vigyan Ashram program in 2020-21. During financial crises they have also supported us using platform of other NGOs. We are thankful for their kind support and appreciation of our work. List of donors is attached in the annexure.

Mr.Anil Date, Mr.Suhas Belapurkar, Mr.Chetan Kadam, Mrs.Deepti Bapat
Mrs.Medha Bhide, Mr.Rajesh Kale, Mr.Ryan Lopes, Mr.Suman Mukharjee
Mr.Sougata Maitra, Mr.Varad Bhagwat, Mr.Jai Sharma, Mr.Sunny Dsoza
Mr.Hemant Dhodke, Mrs.Leena Mandar Orpe, Mr.Avinash Elangovan
Mr.Mandar Chavan, Mr.Anuya Ayair, Mrs.Vidya Kasargoad, Mr.Abhay Limaye
Mr.Pramod Dadmal, Mr.Pratik Farsale, Miss.Sonal shinde,

Management committee meetings:

Vigyan ashram's management committee comprises on of Mr.Ashok Kalbag, Mr.Vijay Kumar, Mr.Mahendra Rajgude, Mrs.Anjali Chipalkatti, Dr.Jayasing Kalake & Dr.Suhas Altekar (till Aug 21), Mr.S.D Gokhale (from Jan 22) and Dr.Yogesh Kulkarni. The management committee meetings were held on 30th May 2021, 15th September 2021, 30th October 2021 and 30th January 2022 to discuss strategic, administrative and financial matters.

We are thankful to MC members of VA, volunteers, staff, Students, parents, Villagers of Pabal and our financial partners, CSR supporter for their continuous support.