

Annual  
Report

2015-16

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Vigyan Ashram (a center of Indian  
Institute of Education)

At.Post.Pabal  
Dist.Pune  
412403

## Introduction :

Vigyan ashram has another eventful year thanks to all our well-wishers and supporter. We are happy to present annual report for the year 2015-16.

Over the years, we are working with out of school youth. We have proved methodology of 'Learning while doing' in formal schools and in non-formal settings. Now we are taking next big step to introduce 'Natural way of learning' i.e 'learning while doing socially useful productive work' at university level. We have entered into MOU with Savitribai Phule Pune University (SPPU) to start Design Innovation Center (DIC) at Pabal. The center was formally inaugurated by



Dr.Neil Greshfeld, Director, Center for Bits and atoms, MIT, USA on 20<sup>th</sup> March 2016.

We have constructed new place for Design Innovation center through support of Asha for Education and INDUSA Endowments.

We have also established 'Technology Demonstration Park'. We have displayed all technologies developed by VA at one place for demonstration to visitors.

We are thankful to all our project partners for their support. We are also thankful to Board of Trustee of Indian Institute of Education (IIE), volunteers, villagers of Pabal village, students & parents for their



continues support in our work. We look forward for your continuing support and guidance in fulfilling vision & mission Vigyan Ashram!

## List of project

Following are important programme undertaken by Vigyan ashram with support of different partners during 2015-16 :-

Sr N	Project Title	Objective	Funding agency
1	CORE support program – Phase II	Development & dissemination of appropriate rural technologies.	DST CORE (SEED Division)
2	Science & Technology based entrepreneurship Development (STED)	Establishing technology based rural micro-enterprises in selected 6 Districts of Maharashtra state.	DST
3	Technology Development cum Entrepreneurship development	Providing fellowship support to budding entrepreneurs and developing rural technologies	Praj Foundation (Pune)
4	Design Innovation Centre (DIC) project	Establishing Design Innovation centre at Pabal.	Savitribai Phule Pune University – MHRD
5	DBRT Program and vocational program for youth.	Implementing vocational program for rural youth.	Asha for Education, Eaton Foundation, TATA motors, Megger India Pvt Ltd, SPA Education Foundation, District administration, Balarampur (CG) and many individual well wishers
6	Proposal for initiating scaling up of Introduction to Basic technology (IBT) program in Chhattisgarh	Implementing IBT programme in Tribal Schools of Chhattisgarh state.	UNICEF , Chhattisgarh
7	IBT Model School Project	Taking IBT program on 20 schools to next level. IBT 2.0	Praj Foundation
8	IBT program in schools	Implementing IBT program in rural schools	IL&FS Education and Technology services, Suzlon foundation, Lend-a-hand-India, MKF
9	IBT in Dantewada	Implementing IBT program in porta cabin schools in Dantewada district	District administration, Dantewada, CG
10	Infrastructure development (construction / hostel upgradation/tools)	DIC construction , Hostel filter, bed, hostel upgrade, two wheeler , tractor	INDUSA, Kusum Soham parivar, many individual donors and well wishers

## A. Diploma in Basic Rural Technology (DBRT)



- DBRT is one year full time residential programme, recognised by NIOS (National Institute of Open Schooling). Total 29 students from DBRT batch 2014-15 completed their diploma programme and got successfully placed for apprenticeship.

- New DBRT batch (2015-16) started from 10<sup>th</sup> July with 47 students. We have students from Maharashtra, Chhattisgarh,

Madhya-Pradesh, Telangana, Jammu & Kashmir.

- This year, we have admitted 3 students with special needs. This is an experiment and councillors from Army Public School in Pune will monitor their progress.
- TATA motors foundation , ASHA for Education, M/s Eton Pvt Lts, M/S. SPA Management system, Members of Soham Ganesh Kusum Samuh, Mr.Darshan wadhava, Mr.Sameer Jog, Mr.Ashish Alase, Hemant & Jayshri Parkhi, Mr.Daniel & Elisabeth Erasmus and many other Individual donors for supporting DBRT & other vocational programme. We are very thankful for their supporters.
- DBRT trainers also conducted various short skill training courses for rural youth , SHG members , farmers etc. **Details of these course are as -**

Vigyan ashram also got registered itself as Vocational Training Provider (VTP) under state government initiative of Mahakaushalya Scheme for food processing course.

Similarly we have applied for registration for four new skill courses with Agricultural Skill Council of India (ASCI). The courses are Greenhouse Technician , Poultry farming Tractor operator and Micro irrigation technician.

S.N.	Type of Programme and Topic	Duration	Name of course training (Number of trainees)
1	Short term vocational courses conducted in Pabal campus.	1 to 3 Month	Welder fabrication – 4, Basic electrification- 4 ,Food processing- 12 Poultry farming & Basic Agriculture – 16 , Basics account keeping (Tally ERP) – 45
2	Students workshops @ DIY Lab at JPNCE Pune	2 to 7 Days	Arduino Hackethon workshop- 71, Basic of digital fabrication – 20 , 3D Printing – 50.
3	Skill training @ Livelihood college Balarampour (Chhattisgarh)	15 to 30 Days	Basic solar electricity & solar lamp – 28 Solar Service Provider - 30 Poultry farming & Hatching (Pabal campus) – 13

## B. Introduction to Basic Technology (IBT)

Introduction to Basic Technology (IBT) is renamed as 'Multi Skill Foundation Course (MSFC)' under National Skills Qualification Framework (NSQF). Here are highlights of the 2015-16 :-

- 1) Govt Maharashtra has introduced IBT-MSFC program in few Govt schools through private agencies. We are happy that program is getting accepted and getting universalized.
- 2) We have got invitation to introduce IBT in 12 schools in Odisha. These are Ekal model residential schools for SC & ST candidates. They have made a good progress.
- 3) Unicef – Chattisgarh has made documentary on IBT program in Dantewad and Bijapur. It is available on u-tube : <https://www.youtube.com/watch?v=FSrvjZaEAEQ>
- 4) With help of Praj Foundation, we are concentrating on 16 schools and effort is being made to make them Model IBT School. We are promoting examples of happenings in these schools through social media. This motivates other IBT schools to adopt such intervention. Our Whatsapp group for IBT has more than 400+ active members.
- 5) **3D Printer in Hirkani Vidyalaya** - With the support of IL & FS , Vigyan Ashram has installed 3D printer in Hirkani Vidyalaya, Gawadewadi, Tal-Ambegaon, Dist- Pune. This is probably the first rural school to have 3D printing facility in the country. We have conducted six workshop for IBT students on 3D printing at DIY lab.
- 6) FabEd workshop at IIT, Powai for IX std students from four IBT schools (2<sup>nd</sup> – 6<sup>th</sup> Oct). We have trained students in developing project using design thinking methodology and digital fabrication tools. Students have made innovative projects and learn the advanced tools very easily. Outcome of the first workshop gives us a direction for future development of IBT.
- 7) Vigyan Ashram team has made 10 Open Education Resources (OERs) and tried them in 5 schools near Pandharpur under Shikshan Pandhari project. OER comprises of power-point, video and manual. We made them on new activities like using microcontrollers etc.

### Sample activities in IBT program

- Scrap rally was organised in 27 schools. Students made various things using collected scrap.
- 2 schools made hydroponic fodder
- 16 model schools improved their grades. Tools and IBT rooms in model schools are well organised.



- 8) IBT Instructors training : Training IBT instructors is very important activity to replicate the programme. Major focus of training is to bring “Design thinking” approach in teaching and introduce new appropriate technologies as community service activities. Following training programme were conducted this year-

Training programme	Dates	Number of instructors
5 Days training programme for New Instructor at Pabal, CG and Odisha	<ul style="list-style-type: none"> <li>• 9th to 13th June 2015</li> <li>• 16th to 20th June 2015</li> <li>• 24th Dec to 28th Dec 2015</li> <li>• 7th July to 12th July 2015</li> </ul>	343
2 Days training programme for Senior Instructors Soil testing & electrical repairing at Pabal & CG	<ul style="list-style-type: none"> <li>• 12<sup>th</sup> April to 13<sup>th</sup> April 2016</li> <li>• 21<sup>st</sup> Sep to 22<sup>nd</sup> Sep 2015</li> </ul>	24
10 Days train the training programme for CG instructor at Vigyan Ashram Pabal	<ul style="list-style-type: none"> <li>• 21st May to 30th May 2015</li> </ul>	20
Total beneficiaries		387

IBT programme is supported by Praj Foundation, Suzlon Foundation, Wild-life Conservation Trust, UNICEF- Chhattisgarh, INDUSAPTI , Maharashtra Knowledge Foundation.

### C. Appropriate technologies development and dissemination–

Development and dissemination of appropriate rural technology is one of the prime focus areas of Vigyan ashram’s work. We are thankful to Department of Science and Technology (DST- SEED division CORE support program) and Praj foundation (Pune) for supporting our initiative in development of technologies. Following are important highlighted technology development work during 2015-16 -

Sr No	Particular	Objectives / Application
1	Rice- De-husking machine	This will eliminate manual labour in making hand pounding for making brown rice. Useful for Self help group to dehusk rice in small quantity.
2	Technologies for precision agriculture	To control weather parameters like temperature, humidity in polyhouse, hydroponic etc.
3	Fab Lab Projects : Various projects using digital fabrication	<ul style="list-style-type: none"> <li>• Talking Ganesha –Internet based Question &amp; Answering system.</li> <li>• Prosthetic Hand –Working on development of low cost prosthetic hand</li> </ul>
4	WOMA-VIVUS FAB Incinerator (Sanitary Pad incinerator) – 10	Electricity and solar based personal incinerator for disposal of sanitary waste .

	units are made for pilot testing.	
5	Drying technologies for local vegetable.	Low cost dryers for drying local fruits and vegetable
6	Technology development work against order from community	Hirda cutter, Hydroponics fodder cultivation unit, HTP pump attachment on motor cycle, washer pump, Poultry feed mixer etc.

**D. Technology dissemination work -** Taking technologies to the masses is important component of 'Rural Development through Education System (RDES)' philosophy of Vigyan Ashram. Following are important highlights of technology dissemination efforts during 2015-16 :

- i. Farmers training workshop – During 2015-16 we have conducted training for 100 farmers in Poultry Egg Incubator, Soil Analysis and advanced fodder technique for goat/ dairy farming.



**Egg Incubator Training**

- ii. We have developed and maintaining website for all technologies developed by 25 core support organisations by Dept of Science & Technology. All these technologies are available on [www.dsttara.com](http://www.dsttara.com)

- iii. Vigyan Ashram has participated in the following exhibition :-

- Sankalp social innovation expo- 2015 during 9<sup>th</sup> & 10<sup>th</sup> April at New Delhi
- Sakal Agro-won Agri Expo – 2015 during 23<sup>rd</sup> to 27<sup>th</sup> October.
- KVK Narayangaon Agri Expo – 2015 during 5<sup>th</sup> to 8<sup>th</sup> December
- GMRT Khodad (Narayangaon) science & Technology Expo – 28<sup>th</sup> & 29<sup>th</sup> February 2016

- iv. Vigyan Ashram has organised open house exhibition of all its work on 30<sup>th</sup> July 2015 at Pabal. It was visited by around 3500 visitors and including schools students around Pabal.

- v. **Technology Demonstration Park** : With the support of DST, we have created a permanent exhibition of all technologies on Vigyan Ashram campus.

- vi. We are communicating our work through social media platform –

- a) Ongoing progress of Technology development activities : [www.vigyanashram.wordpress.com](http://www.vigyanashram.wordpress.com) - viewed by 33773 peoples during 2015 (Jan - Dec 2015).

- b) Open Educational Resources (OER) are developed and published on [www.learningwhiledoing.in](http://www.learningwhiledoing.in). This portal has uploaded with educational content with 300+ technology manuals / PPTs(Marathi/Hindi/English) 150 + videos .
- c) <https://www.facebook.com/vigyan.ashram.pabal/>

### E. Entrepreneurship Accelerator programme –

- i) To help our alumni to start their enterprises, we have started “Entrepreneurship accelerator” department with the support of NSTEDB (national Science and Technology entrepreneurship development board) under STED (Science & Technology based entrepreneurship Development) scheme.
- ii) We have supported 18 youth to start their enterprises. We have conducted training on 34 potential entrepreneurs on entrepreneurship from 10<sup>th</sup> – 13<sup>th</sup> March 2015 in collaboration with ‘I-create Pvt Ltd’
- iii) **Rural enterprise fellowship :** Total of 7 budding entrepreneurs were supported with 6 month fellowship. They were provided mentorship and also opportunity to sharpen their skills. The fellowship programme is supported by Praj Foundation (Pune) under ‘Technology Incubation Cum Entrepreneurship Development’ (TIED) project.
- iv) **Partnership with RangDe -** Vigyan Ashram is partnered with crowd funding organisation ‘Rangde’ to provide microfinance to our alumni. We have also co-hosted Impact confluence-annual meeting of all partners of RangDe on 6<sup>th</sup> – 8<sup>th</sup> February at JPNC. Total of 70 participants attended the meeting including representatives from 18 field partners from 12 states & RangDe’s social investors.

चला अभिनव निर्माणाकडे...  
शिक्षणकाळातचं व्यावसायिक बनूयात...

**D.I.C.**  
**Design Innovation Center**

**प्रवेश सुरु**

कोर्सचे फायदे :

- स्वतःच्या संकल्पना प्रत्यक्षात साकारण्यासाठी.
- लोकोपयोगी नाविन्यपूर्ण प्रकल्प करणे व त्यावर व्यवसाय उभारणी करण्यासाठी.
- रोजगाराच्या नविन संधी मिळविण्यासाठी.

**D.I.C.**  
पुणे विद्यापीठ व विज्ञान आश्रम यांच्या संयुक्त विद्यमाने खालील कोर्सेस सुरू करित आहे...

- वेस्ट मॅनेजमेन्ट
- सेन्सर ॲप्लीकेशन
- ॲग्रीकल्चर ॲन्ड प्लॅन्ट ग्रोथ
- कम्प्युटर ग्राफिक्स ॲन्ड प्रोडक्ट डिझाईन

प्रशिक्षण  
प्रकल्प सहाय्य  
व्यवसाय उभारणीला मदत  
मान्यता प्राप्त L-5 कौशल्य प्रमाणपत्र

**कालावधी - ६ महिने**

शैक्षणिक पात्रता  
डिप्लोमा, कोणत्याही शाखेतील पदवीधर, L-4 प्रमाणिकरण, द्वितीय वर्ष अभियांत्रिकी प्रशिक्षण घेत असलेले विद्यार्थी, डिबीआरटी किंवा संबंधित विषयाचे पूर्वज्ञान आवश्यक.

प्रवेशासाठी संपर्क : **विज्ञान आश्रम**  
पाबळ, ता.शिरूर, जि.पुणे 412403  
फोन : 9579734720, 9527310383  
ई-मेल : vapabal@gmail.com  
वेब-साईट : www.vigyanashram.com

विज्ञान आश्रम

- v) Details of Entrepreneurship accelerator programme and profile of individual beneficiaries are available on - <https://ruralstartup.wordpress.com/entrepreneurs-stories/>

**F. Design Innovation Centre –**

Vigyan ashram started 'Design Innovation Centre (DIC)' at Pabal in collaboration with Savitribai Phule Pune University. This programme is supported by **Ministry of Human Resource Development (MHRD)** under the scheme **“National Initiative for setting up of Design Innovation Centres, Open Design School & National Design Innovation Network”**. Vigyan ashram will host NSDC approved design courses for college students (any stream) in the area of agriculture , product design , sensor & signalling technology, water and waste management. Aim of DIC will be to incubate ideas which are useful for society while promoting culture of design at college level.

- G. **Infrastructure Update –** Updating training and research facility is continues process. Following important infrastructure development work has been undertaken at Pabal campus during 2015-16.

- i) Workplace for DIC : Constructed (2468 Sq.ft) first floor on the top of kitchen.
- ii) New Tractor with Soil Rotter and trolley / plough attachment pins is purchased for agriculture section. This tractor is of Mitsubishi Make and 22 HP powered, 4 wheel drive and advanced tool attachment provision.
- iii) Digital fabrication equipment's – Laser cutter for cutting and engraving acrylic sheets, 3 D Printers for Pabal and DIY lab.
- iv) Automated pouch sealing machine with nitrogen flushing facility for better packaging of food products.
- v) Soil Micro-biology lab – Fully functional soil analysis and microbiology lab with equipment's like digital soil analyser , laminar air flow , autoclave , BOD incubator, shaker etc equipment's. This will be useful for training in soil micro-biology and production bio fertilizers.
- vi) Computer lab with advanced designing software's and digital classroom cum conference hall with audio-visual projection facility.



## H. Important publications -

Some of the important publications during Year 2015-16 are as follows –

S.N	Title of Paper	Name of Authors	Journal with Vol./No./year/page no.
1	"Aiming for work centred education"	Dr.Yogesh Kulkarni	Learning Curve Issue XXIV (March 2015)- Productive Work as Pedagogy' of Azim Premji University learning Curve 'Azim Premji University '
2	"Reducing Evaporative Water Losses from Irrigation Ponds Through the Re-Use of PET Bottles"	Ranajeet Shanbhag	'Journal of irrigation and drainage engineering' Vol -142 Issue -2 (February – 2016) 10.1061/(ASCE)IR.1943-4774.0000972, 06015005 ISSN (print): 0733-9437 ,ISSN (online): 1943-4774 Publisher: American Society of Civil Engineers
3	"Effect of Recirculation Aquaculture System (RAS) on Fish farming and Vegetables"	Ranajeet Shanbhag	'Periodic Research' VOL-IV,ISSUE-II,Nov-2015, Publisher- Social Research Foundation , Bhopal (India), RNI No.UPBIL/2012/55438

I. **Awards and reorganization –** Vigyan ashram received following recognitions / awards during 2015-16.

- "Guru Sanmaan" award by 'Savarkar Prathisthan(Sangli)' for work in Education & technology development
- Kai.Sulochana Natu Smruti Sevavrati award for rural development work.



J. **Staff –** We have 8 new members joined in 2015-16. Present strength of Vigyan Ashram staff is 30.

**K. Workshop / Conferences :** Following important trainings workshops / conferences attended by our staff during 2015-16 –

S.N	Name of training organization/experts	Name of VA representative
1.	“Teaching Through Research” Leadership conference organized by Centre for research and interdisciplinary (Paris) during 13 <sup>th</sup> to 18 <sup>th</sup> April.	Mr.Ranjeet Shanbag
2.	Fab-Asia-Network (FAN)-2 at Tiapai Taiwan during 20th to 28th May 2015	Dr.Yogesh Kulkarni
3.	‘ Leadership through real life situations’ Conference, 10-12 <sup>th</sup> July 2015 at CRI Paris	Dr.Yogesh Kulkarni
5	International Conference on Digital Fabrication at MIT , Boston (USA) during 3rd to 9th August.	Dr.Yogesh Kulkarni

**I. Management committee meetings –**

Vigyan ashram’s management committee comprises on of Mrs.Mira Kalbag, Mr.Ashok Kalbag, Mr.Vijay Kumar, Mr.Sunil Kulkarni, Mr.Pravin Mahajan, Dr.Aruna Giri and Dr.Yogesh Kulkarni. The management committee meetings were held on 10<sup>th</sup> April, 30<sup>th</sup> July and 24<sup>th</sup> October 2015 during 2015-16 for discussing strategic, administrative and financial matters. Vigyan ashram is thankful to management committee members and Board of Trust of Indian Institute of Education for their support and guidance.

We are acknowledge support of various volunteers, IBT Schools, R & D institutes, students, alumni, staff members and Pabal villagers for their continues support and love.

