AGASTYA INTERNATIONAL FOUNDATION
SUPPORTED BY R. JHUNJHUNWALA FOUNDATION & OTHERS

INSIGHTS

2015-16
ANNUAL REPORT

www.agastya.org
Table of Contents

1. Introduction
   2. Area of Focus
      • Hub
         a. Campus Creativity Lab
         b. Science Center
      • Spokes
         a. Mobile Labs
         b. Lab-On-a-Bike
         c. Techlabike
         d. Lab-in-a-Box
      • Science, Art and Innovation Fairs
      • Operation Vasantha
      • Young Instructor Leaders
      • Teacher Training
   3. New Initiatives
      a. MTGS: A concept
      b. Biodiscovery
      c. Maja Box
      d. Make your own lab
      e. Capacity Building Workshops
      f. Digital Library
      g. Raspberry Pi Lab
      h. Lab-on-a-Tab
   4. New Collaborations
   5. Partners
   6. Team Agastya
   7. Looking Forward
Mission

Agastya established its mission “to spark curiosity, nurture creativity and instill confidence in underprivileged children and government schoolteachers through hands-on, experiential learning.” The mission is re-phrased made simpler: “to spread and disseminate the spirit of Aah! Aha! and Ha-ha.” Aah happens through stimulating, unexpected and counter-intuitive experiences. Aha is the result of questioning, investigation, experimentation and discovery. Ha-ha expresses joy in learning, reduction in fear and improvement in retention and performance.

Vision

To Build a new India of Tinkerers, Creators, Solution seekers and Innovators
From the Chairman’s Desk

Dear Friend,

Articulating and communicating a simple and powerful mission can drive an organization’s energy and passion. One of my personal goals this year was - and will continue to be in the years to come - to continue to refine and communicate Agastya’s mission to all our stakeholders - students, teachers, staff, community members and partners. When a visiting government schoolteacher from Maharashtra asked me if I had a specific message for teachers, I replied, “Aah! Aha! Ha-ha!” A few weeks later, a young boy of six on campus looked up at me with a smile and shouted, “Aha! Aha! Ha-ha!” It was music to my years. The boy instinctively had understood Agastya’s mission, “to spark curiosity (Aah!), nurture creativity (Aha!) and instill confidence (Ha-ha!).”

Agastya continues to strengthen its reputation for innovating at scale, to expand its reach, and improve the quality of its service to children, teachers, community members and social partners. Agastya expanded its reach to eighteen states in India with a commensurate increase in the number of mobile labs, lab-on-bikes and science centers resulting in over 60 lac (6 million) education exposures (each exposure equals two to two and a half hours of stimulating hands-on learning). Our collaboration with Professor Huggy Rao of the Stanford Graduate School of Business on a design thinking project at scale is exciting and might even be a game changer. The Raspberry Pi project with Cambridge University has introduced low cost technology for promoting digital literacy among rural children. The pilot launch of the Maja Box (Maja or Mazaa means fun) in villages surrounding the Kuppam campus promises to usher in a new level of engagement with primary school children and, importantly, their parents. Operation Vasantha, Agastya’s night village school program has evolved into a channel for supporting children in their education at home on a mass level. Agastya’s Make Your Own Lab promises to usher in an “age of makers.” A major teacher training program based on the philosophy of constructivism that was launched for government schoolteachers last year with the support of the Infosys Foundation, the Infosys Science Foundation and IBM has grown impressively and benefitted two thousand teachers.

Agastya won global recognition for its Lab-on-a-Bike (LOB), which was ranked by the World Innovation Summit for Education (WISE), Qatar among the six top innovations worldwide. Competing with over four hundred and fifty entrants from across India, the LOB won the prestigious Marico India for Innovation Award. Agastya also won the Deshpande Foundation’s Sandbox Catalyst Award, which was presented by Nobel laureate Prof. Muhammad Yunus and the Give2Asia 2015 Program Excellence Award in San Francisco, USA. CNN featured Agastya’s mobile science labs in a program titled Einstein in the Village and the Economic Times of India carried a four page article on Agastya. I was honored to deliver the keynote address to several hundred corporate and education representatives gathered at the annual RAFT (Resource Area for Teaching) conference in San Jose, California, and to speak at the Indiaspora meet in Washington, DC.

As always, my colleagues and I are grateful to Agastya’s board of trustees for its enlightened and caring leadership. I offer special and profound thanks to our corporate and individual donor partners, our collaborators in government and our external resource persons and advisors. None of Agastya’s achievements and contributions would have been possible without the energy, passion and commitment of its staff and the active participation of millions of children, teachers and communities across India that we are privileged to serve.

Sincerely,

Ramji Raghavan
Founder and Chairman
Campus Creativity Lab

Agastya’s unique 172 acre Campus Creativity Lab provides Agastya with a space to study ecology, art and carry out experiments in education.

The campus hosts various laboratories augmenting with the curriculum in the government schools to study science, maths, arts, ecology and other subjects through experiential learning. In the process of this, Campus imparted 2,04,190 children exposures in the year 2015-16. The Campus acts as a HUB for teacher training programs and an “idea factory” where new learning ideas and methods are developed and rolled out.

Instructor Master Trainer

As Agastya scales nationwide, maintaining and improving the quality of its 800+ “teaching igniters” is a critical priority, for which Agastya has established a dedicated cadre of Instructor’s Master Trainer.

Royal Society for Chemistry
Salter’s Chemistry Camp

With the purpose of inspiring children to study chemistry further, Agastya together with Salter’s Institute and Royal Society Chemistry organised a residential Chemistry camp in Campus. 60 children participated and explored fun chemistry experiments in a laboratory environment. The camp was sponsored by Dr. Yusuf Hamid as a part of the Flagship Inspirational Chemistry programme.

Navarachana

Innovation Hub “Nava-Rachana” is a space to promote exploration and learning during the ”PROCESS OF INNOVATION” among children. The children developed 192 prototypes by using STEM (Science, Technology, Engineering, Mathematics) based learning.

Jala Jagrati

Jala Jagrati- a holistic way of looking at water! was organized to make children understand various aspects of water such as science, arts, economics, politics, and societal. Children showcased few experiments on water followed by puppet show and a theater performance.

Abhivyakti

Abhivyakti program introduces children to explore old and new methods of photography. By doing this child understands mathematical concepts, scientific, artistic and cultural evolution of image and image making techniques. While the alternative photographic processes dealt with monochrome, Agastya extended that idea to capture colors. This concept was understood using digital camera. Children built a digital camera (big shot DIY camera) and tested them by taking few photographs.

Sangam

Sangam was a beautiful amalgamation of Bharatnatyam and Ballet, performed at the Agastya auditorium. Sangam 2, the second edition, was a fusion of education, music and theatre.
Science Center

From 47 centers last year, Agastya has successfully established 69 interactive science centers across 18 states of India. At these Centers, children and teachers are introduced to hands-on concepts in physics, chemistry, biology and ecology. This year saw the establishment of interactive Science Centers in rural and far flung areas of Dantewada, Agara in Sheopur and Lonikand in Pune where our direct beneficiaries were largely first generation learners with the perception that education lacked joy, meaning and relevance and did not prepare children for the challenges of an increasingly global world that rewarded skills, innovation and enterprise.

In order to step-up the potential of the Government School teachers in the State, MSCERT(Government of Maharashtra) desired to set up one Science Centre in each of the DIET Centres (District Institute for Education & Training) across 33 Districts of Maharashtra. Agastya, with the support of SBI has set up 6 Science Centres and 3 Science Centres with the support of SBI Life. The centers are providing a platform for teacher training program to supplement existing training initiatives of the Government while providing inputs to augment curriculum and pedagogy already followed by the teachers in their respective classrooms.

Achievements of our little stars

Agastya students were invited to send their original creative technological ideas and innovation; 5 for Design for Change (DFC) and 2 IGNITE. DFC is the largest global movement of children driving change in their own communities by unleashing their ‘I CAN’ superpower while Dr. APJ Abdul Kalam IGNITE competition is an annual national competition to harness the creative and innovative spirit of children.
Four of the submitted projects were selected in the category of top 100 projects across India and two others received a special award at IRIS 2015.

**Award winning Projects at IRIS 2015**

**Affordable Solar operated Sieve Machine:** To help clean all types of grains from husk, dust, soil granules and stones in order to help farmers, grain merchants in saving energy, time and to reducing labor costs.

**Natural Energy Utility from the Waste Coconut Leaves:** India is second largest producer of coconut in world; it produces tons of agro waste every year, which is an abundant resource. Disposal of this agro waste creates environmental issues, to avoid this and to support the demand for green and clean energy the children prepared fuel briquettes using coconut leaves.
“If the children can’t get to Agastya, Agastya will go to them”. This is precisely the role of Mobile Labs, crisscrossing thousands of kilometers of road, ribboning the landscape of rural India. Mobile Labs are loaded with science models and low-cost experiments, digital literacy (iMobile Lab) and ecology bringing them to under-resourced schools. We have grown from 120 Mobile Labs to 152 in one year. Agastya has entered two new states since last year totalling to 18 states.

The total number of exposures achieved through Mobile Science Lab was 22,93,800. This year Agastya innovated 20+ models for the program and have modified over 20 existing models.
Lab-on-a-Bike

Lab-on-a-Bike represents the innovative side of Agastya’s outreach models, it combines compactness, portability and modularity of the Lab-in-a-Box (LIB) with mobility of a motorbike. Through this approach, the Science concepts could reach areas which the Mobile Science Labs cannot reach. The total number of exposures achieved this year through the Lab-on-a-Bike was 2,29,380. The number of Lab-on-a-Bikes have increased from 15 to 37.

Agastya won the prestigious Marico Innovation Award for the program and was also nominated for the 2015-16 WISE Awards.

TechLaBike

How would they use technology to transform lives? This was the question posed by India’s Google Impact Challenge Awards of 2013, the result was Agastya winning the award for TechLaBike. The TechLaBike takes the Lab-on-a-Bike to the next level, the Instructor delivers science education with a touch of Digital literacy. Children who have never seen a computer are given a chance to explore the technology, at the doorstep of remote village schools. The total number of exposures achieved this year through the TechLaBike was 2,29,380.

Lab-in-a-Box

Lab-in-a-Box program comprises of 10 boxes which are treasure chests loaded with equipment for making hands-on Science experiments as a regular part of the School curriculum. The LIB geography this year has spread to Maharashtra stimulating the minds of more children.
Science, Art and Innovation Fairs

Kalakootami
For the first time, Agastya hosted an event, Kalakootami- an art and creativity fair, in Kuppam. The creative work of children in Media Arts, photography, films and library programs featured in the fair. Special attraction in the fair was dozens of handmade photo prints by kids and performance like shadow puppetry by operation Vasantha volunteers etc. The fair draws an attention of 2,100+ visitors including children, teachers and others.

Jignyasa
Jignyasa-2016 becomes a national level event from this year attracting student from 13 states of India. Around 150+ projects are presented by children during the event. More than 18,000 visitors including students, teachers, and parents witnessed the event.

Anveshana
After proven success of Anveshana at Bangalore and Hyderabad, Agastya executed Anveshana, a science and engineering fair in Delhi for the first time with the support from Synopsys. Around 150 colleges participated and 30 innovative projects showcased in an event. Nearly 1,000 school students visited a fair in Delhi.

“Anveshana is good platform to learn key skills like teaching, technicality, leadership, communication etc which helps us as to become a thriving student.”
Shubham Baunthiyal -Bharati Vidyapeeth’s College of Engineering, New Delhi
Operation Vasantha

Education is the surest way out of poverty!

These centres are highly interactive, remedial evening classes aiming to educate children and families on the importance of education through learning that is Fun! Agastya trains young volunteers to educate and inspire out-of-school children, holding classes outside working hours for 30 children. This year has seen 80+ new OV centres from last year thus inspiring more students to achieve to more.

Young Instructor Leaders

When Science Fairs saw students turning into teachers, Agastya made peer-to-peer teaching an intrinsic part of its programs and thus launched the Young Instructor Leader (YIL) program.

“When in doubt, always ask!”

Students from 6th to 8th grade based on their innate curiosity and questioning nature are selected and trained to explain and demonstrate scientific concepts at Science Fairs to other children. We have created a cadre of over 10,000 Young Instructor Leaders this year expanding it’s reach to Madhya Pradesh and Tamil Nadu.

“That there is a science behind superstition is something the program taught me. I had learned about these things but didn’t know the science behind them. The program has changed my thinking and I’ve started believing in Science”

Chaya, Gudipalli
Teacher Training

Agastya’s teacher training sessions expose teachers to the constructivist theory while constantly reminding them about the context, which is Science teaching. Through a series of four day teacher training sessions, teachers gain insight into principles and methodologies in constructivism along with live demonstrations with school students by resource experts.

Teachers participate in myriad of hands-on activities in context to their respective science syllabus, followed by discussions and reflections. Teachers now prepare lesson plans according to the ‘constructivist approach’ and using the 5E (Engage, Explore, Express, Expand, Evaluate) model.

Perceptible outcomes –

1. Teachers become co-constructors of knowledge along with their students.
2. Teachers are enthusiastic to promote productive student-teacher interaction and meaningful hands-on learning activities amongst their students thereby significantly improving the classroom environment.
3. By teaching Science using the Constructivist Approach, teachers promote creative-thinking and problem-solving skills amongst their students.
4. Peer-learning is promoted which facilitates all students to be included, which facilitates inclusive learning.
5. The program aids teachers in building and enhancing knowledge base on constructivism.

Over the past two years, Agastya has conducted 76 teacher training sessions through which 2381 higher primary and secondary school teachers from government schools in Karnataka, Maharashtra and Odisha have been facilitated to practice constructivist approach to teaching.

“Before Agastya I would experience stage fright when standing in front of a crowd to explain concepts. However, I was trained to take classes by Agastya and I lost my fear”

Jaganath,
MTGS: A concept

Maverick Teachers Global Summit (MTGS 2016) is a platform where 35 teachers from all across the globe will come together to work on the themes derived by the United Nations Sustainability Goals (UNSDG 2015). The participating Maverick Teachers will find space for self-exploration, and authentic learning. This summit aims to attract passionate, creative, deeply committed school educators. These ‘mavericks’ will collaborate over 6 days to create various ‘actionable’ educational pedagogy models by leveraging on participants experiences in the school classroom, their aspirations and vision for the future.

Bio Discovery Center

Agastya is gearing up to launch an exciting new program at Agastya’s Campus Creativity Lab- The Bio Discovery Center- next year. The Bio Discovery Center is going to house some of the best-in-class learning experiences for children in the field of life sciences. It is being developed with help from scientists from the biological world as well as medical professionals and educators. The first phase of the Bio Discovery Center consists of four components and will be launched in June this year:

1. An outdoor learning module- The Learning Gardens
2. An Investigative Learning Lab- Let’s Investigate
3. Exhibit based modules- Sensorium and Mechanics of Movement
Maja Box

To enable discovery through exploration among the younger children; 7 to 10 year olds, the Maja box was piloted in early 2016. It is a curiosity kit that has play as its theme, allows discovery through exploration, and has maja as the outcome – a kit that is child’s own and is available any time, to engage in the comfort of her home. The idea was to place a small gift in the child’s own hands and let them play, explore, discover and have fun.

The Maja Box program endeavours to imbibe several key traits such as ownership and responsibility for the items in their possession, value of sharing and collaboration, possibility of learning at multiple levels and accepting failure is a step towards success.

Make Your Own Lab program

Agastya conducted Teacher Training program by using a ‘Make your own Lab’ kit where teachers are encouraged to make low-cost models provided in the kit. Government school Teachers have used the models to provide Hands-on education to the students. The models developed using the low-cost materials in the kit are consistent with school syllabus. The program has received positive feedback and tremendous appreciation from teachers.

Capacity Building Workshops

Agastya instructors are the torchbearers of all our programs and initiatives and in our commitment to reinforce and sustain this workforce; we planned several training and development workshops.Collaborating with field experts such as Mr. Paul Mathew, Harish Kodendera, Dr. Viswanath Gogte, helped our employees to acquire, update and enhance their knowledge, leadership and communication skills.
Digital Library

A digital library capable of serving up to 14 workstations has been set up at Agastya’s Kuppam Campus which has a digital collection of freely accessible books for children for education, study, and for future generations. Some of the features the Digital Library boasts of are:

1. Access to primary information sources.
2. Network accessibility on Intranet and Internet
3. User-friendly interface
4. Client-server architecture
5. Proposed integration with other digital libraries

Another important target audience is our own campus instructors as well as visiting teachers from various schools who accompany the children or come for teacher training.

Raspberry Pi Lab

To impart basic digital literacy skills to community members living in rural India, MEST (Mobile Education for Smart Technology), in partnership with Madanyu, provided Agastya with three Raspberry Pi computers. They conducted a two-week workshop on the various technicalities of the Raspberry Pi at the Kuppam Campus for students and community members.

Lab-on-a-Tab

The Lab-on-a-Tab is a unique blended program introduced by Agastya that combines digital with hands-on learning using a constructivist approach. The beneficiaries of the program are children in Government Schools, ranging from Grades 4 to 9.
New Collaborations

MEST team of Cambridge
The MEST team from Cambridge along with Madanyu, conducted a workshop with our children on low-cost computers and blended learning.

Olin College of Engineering
The Olin College of Engineering along with Babson and Wellesley College have come together to provide children in rural India with access to hands-on learning. With this in mind, they have developed and optimised the ‘Brightbox’, a learning tool for children to understand optics.

Davidson College
An intern from Davidson college, USA worked on creating a Wordpress site for Agastya’s MediaArts program, which showcases the works of children.

InterACT seminar
In collaboration with the MurthyNayak Foundation, InterACT seminar was held at Agastya’s campus creativity lab, Kuppam, leading trends in technology and design were discussed. The seminar was attended by professors from National Institute of Design, IDC, IIT Bombay and media practitioners from India and USA.

IDC, IIT Bombay
IDC, IIT Bombay in collaboration with Tata Center for Technology and Design (TCTD) conducted a workshop for children on illustration.

Stanford Graduate School of Business
Professor Huggy Rao, Rajan Patel, and Anjali Bhatt from the Stanford Graduate School of Business visited our campus in Kuppam and interacted with some of our closest partners and well-wishers.
More than 700+ people from 16 states of India work for the organization and help to make practical, hands-on science education accessible to rural government schools. In addition to instructors and drivers, Agastya's staff includes people in administrative, financial and program execution and management.
Increase in college admissions, participation in science projects and competitions; demand for school labs and hands-on learning, and the national interest in Agastya programs indicate that Agastya is positively impacting the lives of disadvantaged children. Agastya is committed to its goal of reaching 20 million children exposures and 1 million teacher exposures by the year 2020.

Our future plans revolve around our mission of spreading the spirit of

**Aah! Aha! Ha-Ha!**

**Key focuses**

- Expanding teacher training residential facilities on campus.
- Expand reach and footprint in digital learning.
- Train 6000 government school teachers in constructivist-based teaching-learning methods.
- Establish a center for design-centered vocational skill training.
- Build expertise in innovation and design thinking.