Innovation as a way of Life

Annual Report 2019-20
Agastya began as a conversation on the paucity of hands-on education in India. The takeaways from this discussion, and our founder’s zeal to create a new generation of curious, creative and confident citizens—scientists, educators, artists, entrepreneurs and innovators, among others—formed the basis for much of what Agastya is today.

Since Agastya was established in 1999, we have strived to close this gap in literacy and education, bringing children across the country onto a level playing field. Our mission can be summed up in three simple words: Aah! Aha! and Ha-ha!.

Several studies on the state of education in schools have shown that the curiosity levels among children decrease significantly as they progress from one grade to another. We are committed to ensuring that the Aah! factor - sparking and retaining curiosity - remains intact through our programs. Aha! standing for nurturing creativity, allows them to implement and test out their ideas and solutions. Lastly, Ha-ha! refers to our commitment to ensuring that they enjoy the process of learning and gain confidence in their abilities.

Through our mobile science programs, we have been channeling our energy into taking experiential and hands-on education to the remotest corners of the country and stepping away from rote learning. Our 172-acre Campus Creativity Lab, Mobile Science Programs, Science Centres, and night community centers all work together to augment the existing school curriculums and create opportunities for children to explore the subject on their own. As we step into our 22nd year, we have made the pledge of cantering down many more roads across this country, streaking these streets in the colors of learning and innovation and creating in our wake, curious minds who are ready to take on the world.

Agastya has transformed from an organization to a movement, expanding our reach every year and introducing more children and communities to the Agastya way.

| Children reached so far | 13,000,000+ |
| Teachers reached so far | 250,000+ |
| States | 21 |
Agastya’s 20-year-long journey is embodied in the dynamic and innovative methods we have created to promote experiential hands-on learning in the remotest corners of the country. Few organizations anywhere in the world have promoted creative learning so deeply and widely among underserved communities. We take great pride in the fact that we are an organization that is committed to encouraging innovation.

In our 21st year, we made several strides to realize our mission of shaping a new generation of innovators, tinkerers and leaders. With the launch of the first-of-its-kind Innovation Carnival in Mumbai, we introduced themes like global warming and sustainable living to government school children. This was done using both digital and hands-on tools and workshops. It was accompanied by the launch of mobile innovation labs, the Innovation Bus, which reached out to children in schools across Mumbai to promote local innovation. Agastya instructors equipped children with the skills and resources required to solve problems that they had identified in their schools and communities. As a first step in scaling this program Agastya has established ten Mini Innovation Hubs in different parts of the country.

Agastya’s Sarga Sanskruti, or creative dialogues with imaginative innovators program gained momentum with visitors arriving from organizations like the Smithsonian Science Education Center, Washington DC and The Tech Interactive in San Jose, California. These visits have been instrumental in broadening and enhancing Agastya’s innovation capacity and amplifying its work across the globe. Even though the year ended on a markedly down note with the outbreak of the COVID-19 pandemic, Agastya’s response to it has been nothing short of exemplary. In the interest of our employees’ and beneficiaries’ safety and health Agastya made the wise decision to close its offices well ahead of the recommended government lockdown.

Agastya’s achievements would be impossible without the active and joyful cooperation of our large and growing community of learners – children, teachers and communities across India. During the year Agastya created a record by directly reaching its innovative hands-on programs to 1 million children, training more than 7,500 government schoolteachers covering over 5500 schools, and generating 15 million exposures equalling over 30 million learning hours. Additionally, nearly 1 million children have benefited indirectly through the teachers trained by Agastya.

My colleagues and I recognize the strong support of our partners, including corporate and other organizations, like L&T, Honeywell, Infosys, Synopsys, HT Parekh Foundation and Cipla Foundation. They, along with many others like, Deutsche Bank, Bank of America, Tizen, RIST and the state governments across the country have helped Agastya to create and deliver its unique programs to millions of beneficiaries across 21 states in the country. We also acknowledge the steadfast support of the R Jhunjhunwala Foundation and our exceptional board of trustees, who have been extraordinarily generous with their time, resources and ideas in advising and advancing Agastya’s towards its vision of a creative India.

As Agastya, along with its partners and beneficiaries, enter a period of turmoil and uncertainty created by Covid 19, we will do well to remember that every great crisis gives birth to a great opportunity. Agastya will be challenged as never before; we will march forward confidently with a ‘can do’ attitude and the determination to emerge from this crisis stronger and better.

Chairperson’s Message

Ramji Raghavan
“Creativeness has its roots in the initiative which comes into being only when there is deep discontent. Don’t be afraid of discontent, but give it nourishment until the spark becomes a flame…”

- J.Krishnamurti, Think on These Things

Innovation is the cornerstone of nearly every success story that mankind has witnessed. It is often the single factor that separates what something is from what it can truly become. So ingrained is innovation in what we do every day that many do not realize that it has become an unconscious part of their very DNA. From the manufacturer who structures the shop floor to improve the flow of activities, to the chef who arranges the spices to limit movement while cooking, to the IT professional who devises a more efficient way to attend calls and manage daily tasks. Each of these so-called ‘life hacks’ is a form of innovation unto itself. Innovation is as much an answer to the question of why German and Japanese steels are seen as superior as it is an explanation for why one farmer thrives, while another struggles under the same conditions. It is the reason empires have grown and it is the driving force behind the profitability of great companies. It is borne of discontentment and an unquenching desire to continually improve, augment, and evolve our practices.

For over twenty years, the Agastya Foundation has pioneered the idea of innovation at the grassroots level. Agastya envisions creating a movement, where teachers and children draw on their own ingenuity and purpose of vision to bring forth a culture of self-sustaining creativity. Agastya’s own innovations include its unique distribution model, the development of low-cost experiments, and its various ecological initiatives. Many of these were fuelled by necessity, which gave Agastya a unique perspective on how children and teachers with limited opportunities could harness their creative streaks to find value using scarce resources. Over time, Agastya’s methods have been formalized into the Innovation Hub, innovation carnivals (Jigyasa and Anveshana), and the introduction of the innovation bus. Using its own experiences as examples gives Agastya the credibility to propagate its message by lending belief into what may otherwise be only a theoretical recipe for success. One very stark and obvious validation for Agastya’s methods has been seen in the success of Operation Vasantha. The launch and subsequent proliferation of OV across some 700 villages has demonstrated the beginnings of the movement that Agastya has so passionately striven for these past two decades. However, such achievements only fire the starting gun for what remains a long and fascinating race ahead.

With the onset of the Covid-19 pandemic, Agastya again finds itself at a cusp of innovation. With the standard delivery models suspended, the foundation now looks to new methods of dissemination. Within the organization, the promotion of Nayi Soch (New Thinking), encourages innovation among the employees. Our instructors are setting an example by introducing new models and prototypes to help explain science, while our management seeks out new partners and ideas to help it through this mercurial, demanding environment.

It is perhaps apt that Agastya has made innovation the centerpiece of its vision and beneficial in the current climate that the foundation has always endorsed a certain discontentment with the status quo. It is these very characteristics that now serve us well to see through the pandemic and emerge from the other side not only as survivors, but as an organization re-shaped and re-imagined to take on an ever-uncertain future with certain success.

Innovation As A Way of Life

By Adhirath Sethi,
Author, Director of Poly Fluoro Ltd, and member of Agastya’s Board of Directors.
21st Century Skills

**Foundational Literacies**
- How students apply core skills to everyday tasks

1. Literacy
2. Numeracy
3. Scientific Literacy
4. ICT Literacy
5. Financial Literacy
6. Cultural and Civic Literacy

**Competencies**
- How students approach complex challenges

7. Critical thinking/Problem-solving
8. Creativity
9. Communication
10. Collaboration

Source: World Economic Forum
The direction and vision of Agastya’s programs in 2019-20 reflected the vision of the organisation as a whole, with an emphasis being placed on fostering grassroots innovation. This year saw the beginnings of the Innovation Carnival, the Innovation Bus and Mini Innovation Hubs, all focused on achieving this objective. All of Agastya’s existing programs also brought in elements of innovation like design thinking into the curriculum, encouraging children to tap into their creativity and problem-solving abilities.

We expanded our reach to include three new states - Assam, Sikkim and West Bengal. Our students and instructors also had the opportunity to meet experts from the Smithsonian Science Education Center, the National Aeronautics and Space Administration, the Tech Interactive and other such prestigious institutions.

A certificate from the Great Place to Work Institute, India, officially declared Agastya a ‘Great Place to Work’. With the establishment of Agastya USA, the United States chapter of our organisation, new avenues of fundraising have opened up. Meanwhile, our 20-year journey found its place in a book called ‘7 Sutras of Innovation’ by Nikhil Inamdar and Marico Innovation Foundation. We also came out with our own book, “Butterflies of Agastya”, penned by naturalist Dr. Bhanumathi, on the butterflies in the Campus Creativity Lab near Kuppam.
While Agastya’s programs are designed to spread Aah! Aha! and Ha-Ha! to every corner of the country, we are constantly looking for ways to enhance this experience for children. It is hence important for us to constantly assess the impact of our programs and constantly update and modify our programs, based on the results of the assessments.

**Quantitative Assessment**

**Transitioning to Pi Cards for data collection**

Initially, the Impact Assessment Team only dealt with small samples of data, covering only the state of Karnataka.

But our reach has been consistently growing and expanding over the years, with our programs currently serving more than 21 states across India. The broadening scope has also meant that program-related data has increased exponentially. Our impact team now deals with a sample of more than one lakh every year. Recognizing the need for an evolved method of data collection, we moved from observational techniques and simple questionnaires to the Pi-Card app, which is a digital data capturing methodology that works similar to QR codes and captures responses by reading the cards via a specially developed mobile app.

This new digitized way has eliminated 90% manual data entry, 99% of manual data cleaning, and made it a much faster and efficient process. The responses of the children are immediately captured in the mobile app, increasing data accuracy. It has also reduced paper wastage, making it a more sustainable way of assessing data.
In 2019-20, about 1 lakh students (Girls – 53,651, Boys – 46,439) who were a part of 328 programs, including Mobile Science Labs, Science Centres and Young Instructor Leaders, were assessed.

The framework for the assessment was created by the Indian Institute of Management, Bangalore (IIM-B), and four parameters were decided to be the measurable outcomes of the impact assessment. They were decided based on the organization’s primary objectives.

- **Knowledge among relevant stakeholders of alternative methods of learning and teaching science that is preferred.**
- **Behavior characterized by exploration, investigation, observation, and a desire to learn more about new, incongruous, or unknown elements.**
- **The ability to stand up and speak their mind and consciousness of their own ability and power, and a demonstration of the same.**
- **Understanding of scientific concepts and application of the same.**

Percentage of overall improvement in these parameters post Agastya's intervention is given in the graph above.
Agastya’s intervention also aims at triggering important behavioral shifts: from saying ‘Yes to Why’, from ‘Looking to Observing’, from being ‘Passive to Exploring’, from ‘Textbook bound to Hands-on’ learning and from ‘Fear to Confidence’.

Testimonies of children in Agastya programs were collected and the degree of the shifts experienced was mapped using indicators in a behavioral matrix. The matrix indicators are Persistence, Active Participation, Generation of Ideas, Development of Ideas, Linking Ideas, Attentive (Self regulative), Teamwork, and Leadership.

1663 case stories and 7079 instances were curated in 2019-20 and the percentage increase in each of the indicators before and after Agastya’s intervention was found:
Needless to the confluence of Karnataka, Andhra Pradesh, and Tamil Nadu lies our Campus Creativity Lab. A previously barren land in Gudlapalli, Andhra Pradesh now boasts of lush greenery, maintained by ecologists. It becomes a metaphor of Agastya itself—of turning areas which lacked facilities and educational resources into hubs with lively discussions on science and the arts. The 175-acre campus stretches wide, with enough space for more than 20 labs and curious feet, ready for a day's learning and innovation. Every day about 650 students come to experience Aah! Aah! and Ha-Ha!, opening their eyes to the wonders of the world.

Each inch of the campus is carefully thought out, with large models to delve into, ecology to learn from, and is divided into 6 clusters and further into labs for each subject for children to explore: Navarachana or Innovation Hub, Bio-Discovery and Chemistry Centre, Arts and MediaArts and Library, Discovery Centre, Ramanujan Math Park, and Ecology. The curriculum works to promote thinking and innovation— one that is in increasing need in today's world. Outreach programs are held for the communities around the campus to maximize exposure and learning.
Every year, the Campus Creativity Lab hosts experts and educationalists from all walks of life, who bring their expertise to the children and instructors in the campus. These are facilitated by the constant upgradation of the campus infrastructure. Some highlights of these activities from 2019-20 include:

**Infrastructure:**
- The DNA Park and the outdoor Bio Park were launched with the aim of helping children understand why DNA is the basis of life.
- In a bid to promote clean energy, we expanded our solar-based infrastructure with additional solar panels and 100 solar-powered lights, sponsored by Bharat Electronics Limited.
- Moosilavanna, an arrangement of medicinal plants and herbs is grown on a large human figure in a way that each plant on the figure corresponds to the part of the body that the plant is beneficial for, has been completed.

**Fairs and Outreach Programs:**
Agastya Learning Fairs, Science, and Art fairs were held in schools in villages around the campus, some commemorating special days like Science Day. V. Kota, Veppanapalli Boodhikota, and Nadumuru and Garigacheenapalli all bore witness to these celebrations of experiential learning.

**Camps at Campus**
Proving that learning doesn’t stop at the end of the academic year, there has been an increase in the number of camps conducted for children on the campus. They have been instrumental in attracting children from private schools and introducing them to the Agastya model of learning.

**Workshops:**
- Designeering workshop under Vivek Shenoy, a distinguished professor at the University of Pennsylvania - focused on concepts and fabrication challenges for both the engineering college students and the instructors.
- Introduction to Artificial Intelligence by Chanda Thota, Sr. Director of Engineering at Google, provided good learning into combining robotics and coding to students as well as our instructors.
- Having started 47 new community libraries, we also facilitated workshops to manage these libraries.
- Training for Operation Vasanth volunteers on topics like the English Language through Chipper Sage, "Waste to Wealth" and other life skills.
- Workshop on Biodiversity by renowned naturalist and ecology educator Dr. Bhanumathi.
Interspersed across the country, our Science Centres equipped with models and experiments work to show children a whole new chapter in science - one of fun learning and experiential understanding. These centers are located in urban, semi-urban, and rural areas. Children from schools in the surrounding areas get to interact with models explaining various scientific concepts, with our instructors ever present to provide them with context, encouraging them to have a curious mind and to never stop asking questions.

**Highlights:**
- Mentorship programs for children for science and model-making competitions at local, state, and national levels were conducted in science centers across the country. Many of the participating children have gone on to win prizes in these competitions.
- Interaction with subject experts and other accomplished entrepreneurs, scientists, and career counselors, among others, were held for children.

**Core Science Activity Centres**
The Core Science Activity Centres (CSACs) take this initiative one step forward. The CSACs are outreach facilities in North Karnataka that house more advanced and jumbo-sized models and have dedicated labs for each subject. The CSACs are abuzz with activity all year round, with 2019-20 also witnessing its share of events.

**Highlights:**
- 1873 teachers were trained to present projects for the Innovation in Science Pursuit for Inspired Research awards, organized by the Department of Science & Technology (DST), Government of India this year. 300 projects were sent out of which 3 Projects - two from Bidar and one from Bagalkot CSACs - were selected at the national level.
- An ‘Each One Teach One’ initiative was taken up in Vijayapura and Shivamogga this year, with 6 teachers signing up to teach to 20 school students in the former and 15 students enlisting to teach children in 5 schools and 2 communities in the latter.

*An exposure is used to measure Agastya’s reach. It can be defined as the number of times Agastya has face-to-face interactions with an individual (child/teacher/community member). Each exposure is 2-3 hours in duration.*
Approaching the inequities of access with innovation has meant that Agastya has had to capture the imagination of curious students with a revised pedagogy. Agastya’s pedagogical framework has incorporated application-based learning with practical models. Bundling this with mobility has gone on to become our credo—“When children cannot get to Agastya, Agastya will go to them”.

Our Mobile Science Labs (MSLs) carrying simple scientific models and low-cost experiments come bumping down the road, meandering through streets, ready to enhance the school curriculum and promote experiential learning in those rural and urban areas. These models and experiments bring textbooks alive, showing finer details and exposing inquisitive children to newer ways of thinking and innovating. Education that was mired in rote learning is now transformed into a lively and engaging discussion, of concepts and hands-on learning. The MSLs are able to engage community members too by showcasing everyday concepts of ecology, biology, physics, and chemistry through models with the ever-approachable labs. These MSLs are paving the way ahead in this era of technology and the journey of education is being rewritten through the power of innovation.

Mobile Science Lab 3.0

This same drive for innovation has led to the creation of the Mobile Science Lab 3.0. The pilot for MSL 3.0 has already been launched with exceptional results across India. The all new MSLs have elements such as Project-Based Learning and Micro Science Fairs which allow children to think independently and to use their creativity to come up with models and explain them. Alongside this is the Impact Based Intervention which works to enhance the learning by assessing the impact of the content and pedagogical framework and then working to maximize it. The execution takes place through teacher empowerment, which allows increased involvement of the local schoolteacher. This is combined with instructors as change agents to make the most efficient use of Agastya Instructor and divers by improving their skills and communication.

Spark

Along with our instructors, the drivers of our MSLs are now an active part of the outreach program. Using the Science Practical and Reading Kit or SPARK, drivers can now engage students of lower classes through activities in the kit and can spark curiosity and a desire for learning.

Project-Based Learning

Project-Based learning was piloted in Mobile Science Labs this year. In this student-centered pedagogy, a problem is posed and students work in teams to actively seek out solutions and then present their findings to their classmates.
Agastya's commitment towards hands-on education for all was challenged when certain areas of India's remote regions could not be accessed by the Mobile Labs. With treacherously narrow and difficult to navigate roads, the Mobile Labs had a hard time finding their way through and it left these areas untouched. The response was right there: If the vans were too large, we go smaller. The innovative Labs-on-Bikes came to save the day. These smaller vehicles carrying similar equipment could access these remote areas and promote innovation through example. It was the nexus of portability, mobility, and adaptability. The bikes are equipped with a laptop and portable internet connection, with access to science games, language-neutral videos, quizzes, and more. This innovation-driven solution now promotes digital literacy and hands-on education in the remotest of areas.

Math LOB:
Since its pilot last year, our Math LOB in Gujarat has introduced topics such as arithmetic, algebra, geometry, and fractions to children in an easy and engaging manner. Our instructors have been able to strengthen the children's fundamental concepts and drive the fear of mathematics away from their minds.

Pilot of Electronics LOB:
Incorporating the study of electronics in tandem with the study of science and mathematics works to augment the students' learning. It allows them to use technology to enhance their understanding and give them the know-how of modern electronics in an increasingly digitized world. With the Electronic LOB, students will learn to conduct experiments with basic circuit components, do minimal digital signal analysis of circuitry, and use multimeters. They will then explain their understanding to their peers, cementing the knowledge and ensuring that they understood it right. The Electronic LOB, in this way, works to develop a familiarity with basic electronic components and fundamental concepts, better the understanding of their importance and relevance in the functioning of everyday life, and ensure that the children have the skills to attempt to debug minor issues with electronic items in their surroundings.
A characteristic that is becoming increasingly predominant in India is the high drop-out rates from schools - one that is plagued by the unyielding reality of low incomes. With Operation Vasantha, our night community center program, Agastya has set out to bring these dropouts back into mainstream education. It takes their work hours into account, organizing classes, and study sessions in the evening so these learners, both children and adults, can learn without the fear of losing their livelihood. Socially conscious volunteers from the communities we work in are given training so they can conduct these classes. The volunteers too are able to enhance their own interpersonal skills and begin to make a real change in their community. The activities, which include arts and crafts, quizzes, and reading exercises, are designed to develop the scientific temper, technical skills, better utilization of youth and children in the community.

**Program Highlights for 2019-20**

- With the Child Development Program, we have taken up the responsibility of providing a space conducive for children to finish their homework. Our volunteers provide them with the encouragement and resources to ensure that their curiosity and confidence never wane.
- Activities that engaged the creative side of children’s brains, like self-portraits, photography, and mask making, were conducted.
With the creation of the Young Instructor Leaders (YIL) program, Agastya has redefined the traditional relationship between teachers and students, and one between themselves. Through the YIL program, we have identified students with special interests in key areas of study and given them the opportunity to become teachers for their peers and younger students. The efficacy of the program has been tremendous, with the children on the receiving end of lessons becoming more comfortable when taught by a fellow student and being able to ask questions more freely. The young instructors also have the opportunity to enhance their communication and interpersonal skills, along with deepening their understanding of the subject. Beyond the curriculum, these YILs also gain exposure during community visits and meet prominent people from all walks of life.

**Program highlights in 2019-20**
- Agastya partnered with JP Morgan to build a YIL alumni network and a portal/website. The project has received a technological grant from JP Morgan and is in its nascent stage.
- Scholarships were awarded to YILs alumni by both Agastya as well as other organizations. An amount of ₹9,05,000 was given to 267 alums.
- In an initiative with Arogya World, a global health non-profit organization, YILs were trained to raise awareness of diabetes in their communities. 27,000 children participated in the program.

**Looking Forward**
A new curriculum has been designed to include foundational skill-based activities, project-based learning, and digital and English training during the winter and summer camps. The pilot will be launched in 2020-21 and is targeting 5000 children.
After recognizing very early on that there was a need to equip school teachers with resources and training which would enable them to incorporate hands-on methods of teaching, we launched the Acharya Initiative - our flagship teacher training program. Under the program, a 4-day long residential workshop is conducted for teachers from government schools on Campus Creativity Lab. The workshop gives teachers, from all over the country, tools, and techniques that can be used to conduct their classes using the Constructivist approach, an approach that promotes learning through experience. This process is aided with innovative low-cost models and teaching aids, allowing teachers to take back what they learned to their own classrooms.

Program highlights in 2019-20

- Going digital: Satellite-based teacher training workshops were conducted in the states of Karnataka and Maharashtra.
- Agastya will be presenting a paper on the Acharya Initiative’s take on Constructivism at the upcoming NCERT National Seminar on Teacher Education.

Looking Forward:

- We are focused on conducting online follow-ups through workshops and digital lesson plans.
- The program curriculum will be modified to have increased emphasis on United Nations Sustainable Development goals in the upcoming year.
With increasing digitization, incorporating technology into education has become a necessity. Keeping up with the times, Agastya took its education modules online, with the Lab-on-a-Tab program. Children are given tabs that cover a wide base in the subjects of Physics, Chemistry, and Biology through interactive lessons. These lessons are curated in English as well as vernacular languages to maximize the reach of the tabs and have contextual examples and explanations to make the information easy to understand. Paired with the excitement of using touch-screen technology, these children come to thoroughly enjoy the lessons.

Program highlights in 2019-20

- We piloted the integration of the LoT with the iMobile in Bengaluru and Mysore and received positive feedback from instructors and students.
- Impact study on LoT: An impact study of the LoT program was conducted in Bangalore, Kuppam, Hubli, and Vijayapura. The improvement before and after an LoT session was measured among children. The results showed that around 57% of students felt like there was an improvement in their understanding of lessons with the introduction of the LoT.

Looking Forward:

We are launching a new LoT app which will work both offline and online, thereby decreasing our dependence on the internet and enabling classes to be conducted without the hindrance of poor connections.

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<tr>
<th>No. of LOTs</th>
<th>No. of Children</th>
<th>No. of Teachers</th>
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<tr>
<td>87</td>
<td>4714</td>
<td>384</td>
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Kala Kootami, Agastya’s Art and Creativity Fair, is a melting pot of artistic expression. In this joint venture by the Arts and MediaArts Labs and the Library, children are given a platform to create and display artworks and photographs as well as appreciate and get inspired by the artistic abilities of their peers. Films made by children in Dhwani, our community filmmaking program, are screened and a separate corner is dedicated to showcasing books from our community libraries. In 2019-20, Kala Kootami was held in the Zilla Parishad High School in Garigachinapalli, near Kuppam, Andhra Pradesh.
The introduction of science fairs in modern-day education has yielded exceptional results, with students gaining a more comprehensive hold on the topics they have presented, along with their collaborative, innovative, and creative skills being enhanced. Aside from regular science fairs, Agastya also organizes Jignyasa, a state-level science model-making competition, every year. Jignyasa which means “the inner urge to learn” works to cultivate this hunger for knowledge by allowing students to work, learn, build and exhibit models of their making. This is complemented with various interactive sessions, workshops, and activities to inculcate a scientific methodology.

In 2019-20, the model-making fair was held in several cities in Maharashtra, Bihar, Telangana, and Gujarat, with the national level fair in Pune showcasing entries from 13 states. The upcoming year will see the introduction of a mentorship program for the participants.

With our Anveshana fairs, we aim to promote the streak of innovation and turn it into a mass movement by expanding the age group of students we reach out to. The fest stands out because of its innovative twist of pairing two engineering students with two government school students. These teams of four learn from each other, and are able to collaborate to make and exhibit solutions for a proposed problem. The entire process takes about six months.

In 2019-20 Anveshana was held in the cities of Bangalore, Delhi, Hyderabad, and Mumbai. In the upcoming year, as many as 10 Mini Anveshana events are planned in each of these cities to reach out to a larger number of students.
Held in partnership with the Oberoi Family Foundation, Sarga Samvad aims to create a platform where people from all walks of life, be it a teacher, a social entrepreneur, an innovator, an artist, can come together to experiment, empathize and explore with each other’s skills and expertise. Workshops, seminars, dialogues, and forums conducted allow an efficient understanding of these experts’ work and provide opportunities for collaboration. These can then be integrated into Agastya’s pedagogy. In 2019-20, we expanded our network and gained visibility by presenting at the Organisation for Economic Co-operation and Development conference and connecting with organizations like HundrED.orf, University of Helsinki, NTA, Sweden.

Workshops and sessions were held by leading institutions and individuals including:

- Amy D’amico and Katherine Blachard, Smithsonian Science Education Center, Washington, USA: Global Goals
- Dr. Marcia Delcourt, Dr. Sulaja Warte, Dr. Vrushali Dehadrey, Shalini Dixit - Brainstorming sessions on the Gifted Children Mentorship Program
- Dr. Connie Chow, Virologist and Founder, The Exploratory, Ghana: Exploring Viruses
- Prof. Jonaq Das and exhibition design students, National Institute of Design, Ahmedabad: Design Poetics
- Yagna Sai, Space Kids, India: Glider Design
- Dr. TK Lakshmi, Former Dean, Faculty of Education, Banarathali Vidyapeeth, Rajasthan: Deliberation on the National Education Policy
- Erica Barrueto and Paige Teamey, Tech Interactive, San Jose, California
- Ann Devereaux, Flight System Engineer, National Aeronautics and Space Administration’s Jet Propulsion Laboratory: Educating for the Next Frontier
- Nissim Ranade, Post Doctoral Researcher, Cold Spring Harbor Laboratory, New York, USA: Learning Math Through Art
- Dr. Stuart Kohlhagen, Former Director, Questacon, Australia: Train the Trainer
- Bangalore Little Theater and Indian Cancer Society: Theater play - “The Boy With No Shadow”
Our science on-wheels programs have been taking education to children across the country for over 15 years. We have come a long way since 2002, when our first Mobile Science Lab, loaded with science models and low-cost experiments was launched. With the aim of promoting collaborative workspaces that also include learning aids for children, we remodeled the Mobile Labs to create the Mobile Innovation Bus. Two innovation buses were launched in 2019-20, catering to schools in and around Mumbai.

These mobile maker-spaces travel to schools and teach children to design, experiment, build and invent. The activities are oriented to inculcate problem-solving abilities in children. The end products are models and prototypes built with the help of resources from the bus and the expertise of our instructors. These are put on display at the Innovation Carnival, enabling the children to showcase their innovations to the world. With the help of the resources provided by the two Innovation Buses, as many as 340 ideas were generated by children this year. 145 of them were converted into functional prototypes.
Encouraging innovation right from the grassroots level has been an implied value in all of Agastya’s programs. But with the introduction of the Innovation Carnival, a four-day-long celebration of the spirit of innovation and sustainable practices, it has taken the front seat.

2019 saw the pilot of the first Innovation Carnival in Mumbai, in partnership with ATE Chandra Foundation. Two more carnivals were held in 2019-20 which reached out to children from schools in and around Mumbai. The 4-day event brought these young minds under the same roof where they could learn from and experience interactive STEM-based exhibits. Workshops were conducted by various organizations to promote sustainable practices. Some of these included: “A New Life at Planet X” in which participants had to survive on a newly created Planet, to “Making in 3D” which addressed waste elimination through the use of 3D printers, to “Learn About Our Planet with Google Earth” which allowed children to explore and watch time-lapses of the planet through Google Earth.

An increasingly fast-paced world means that children need to be quick on their feet, responsive, and adaptable. The idea of inculcating this attitude among our children led to the creation of Vaakovakyam, the Agastya Science Quiz. Using quizzing as a pedagogical tool, we expose our students to high-pressure situations and accustom them to thinking on their feet and being calm in the face of stress. Quiz programs were held in states like Karnataka, Andhra Pradesh, Gujarat, and Maharashtra and were sponsored by Texas Instruments, Edelgive Foundation, and L&T Technology Services.
Expanding our successful Navarachana model from the Campus Creativity Lab, we have established Mini Innovation Hubs across the country, including regions like Delhi, Maharashtra, Karnataka, Andhra Pradesh, and Chennai. These hubs create experiential learning opportunities for children, helping them develop a design thinking mindset, an inquisitive perspective, and enhance their problem-solving skills. The focus on innovation in STEM subjects and design process help propel this pedagogical framework. The 8-part curriculum helps ensure that these outcomes take place and the comprehensive layout makes for maximum understanding and student participation.

Appealing to both the right and left side of the brain of our young innovators, our first art and science fair was devised to remove the big, bold partition between the two contradictory sides. The pilot 2-day fair included several workshops and was held with the support of 3 instructors and 6 artists in Kamothe, Mumbai. The science part of the fair focused on studying the concept of existing science models and getting a comprehensive understanding of the principle on which the selected science models functioned. Meanwhile, the art component featured the creation of concept-based storylines to understand scientific principles better and the production of a new model based on their artistic, aesthetic, and designing skills.
Recognition from Deputy CM and Education Minister of Delhi

Our efforts have earned us the praise of the Deputy Chief Minister and Education Minister of Delhi, Shri Manish Sisodia. Speaking about the efforts taken to increase the quality of education in Delhi schools, Sisodia, in an interview with Business Standard, said “We are also using the best national resources for exposure as best possible. Be it Rishi Valley, Pratham, the Agastya Foundation, Sonam Wangchuk’s initiatives, we are exposing our Delhi teachers to whatever national bandwidth there is.”

Milestones and Recognitions

Certified Great Place to Work

Agasuya was certified as a “Great Place to Work” after successfully completing a survey conducted by the Great Place to Work Institute, India. The certificate was awarded for the period of August 2019 to July 2020 under the category of Non-Profit and Charity Organizations.

Kala Ghoda

How do you capture the essence of a city using just a dot? Our team at the Kala Ghoda Arts Festival not just managed to do that with their installation ‘Points of View’, but also won the 1st prize for ‘Best Art Installation Under 18’ while doing so. The installation used methods of painting and pointillism to capture the landscape of Mumbai and the land and forests of the past and future. It was facilitated by Jinal Sondhi and crafted with enthusiasm by over 200 children.

Featured in 7 Sutras of Innovation by Nikhil Inamdar

Agasuya’s journey in re-imagining education in India was succinctly captured by journalist and author Nikhil Inamdar and the Marieco Innovation Foundation in the new book “7 Sutras of Innovation’. Agasuya was one of the 8 organizations featured in the book. Inamdar brought out the foundation of Agasuya’s values by taking readers through Agasuya’s milestones and how they contributed to the growth and scaling of the organization.

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Documenting the butterflies of Agastya

We have created one of the few open-air butterfly parks in the country at our Campus Creativity Lab in Kumpam. This butterfly park was created in 2014 for the development of a habitat for different butterfly species and has since become a haven for rare species of butterflies. These have been documented by Dr. Bhanumathi, a Naturalist and Environmental Educator, in a handbook “Butterflies Of Agastya”, which was released in 2019. This hand guide book is designed to create awareness of the types of butterflies and their role in nature.
Armed with broomsticks, dustbins, and bags, children took to the streets as a part of the Swacchata Pakhwada program, ready to clean and spread the message of a clean India. We had children from 120 schools in 9 cities, including Mumbai, Kuppam, Dehradun, and Jodhpur, participate in the event that was conducted in partnership with Hindustan Petroleum Corporation Limited (HPCL). Teachers and instructors conducted awareness sessions explaining the importance of a clean environment. This included sessions on health and basic hygiene such as washing hands periodically. The children were also taught how to segregate dry and wet waste using separate dustbins after which all the participants received dustbins, mops, and brooms.

Indradhanush, that translates to ‘Rainbow’ brought together a spectrum of different tastes, dispersing and showcasing the creativity of students. Held in Delhi, the one-of-a-kind fair consisted of different narratives, representing the phenomenon of a rainbow. Similar to the way sunlight passes through raindrops and creates a rainbow, these children underwent Agastyas’s training and guidance and presented a rainbow of creativity and learning! Scientific concepts explained through Agastyas’s Aah! Aha! Ha- Ha! approach, forming the narrative about hands-on learning using Agastyas’s specialized models for various scientific concepts. Students explained complicated concepts with great ease to all the visitors and encouraged them to engage with the models for better learning.
The BioScience Fair, held in Rasayani, Maharashtra, combined the subjects of biology and ecology to raise awareness on environmental concerns. Multiple activities including tree plantation, grafting, and teaching children pollution control, were conducted through workshops. 144 Young Instructor Leaders were trained to explain models pertaining to concepts in these subjects to the visitors.

**Celebration of Special days like World Environment day, etc.**

Ensuring that our students are receiving a holistic education has translated into us encouraging celebration of special days such as World Environment Day, Yoga Day, Ocean Day as a part of all our programs across the country. Children get the opportunity to learn more about the significance of these days through hands-on activities and workshops conducted by experts.

**Save our Planet: Tree Plantation drive**

With rising carbon emissions and dangerous environmental disasters, saving trees, the world’s lungs has become a priority. Doing our bit to ensure an increase in the green cover, we conducted multiple tree plantation drives in Dharwad and Hubli in Karnataka.
With the idea of amplifying our message of Aah! Aha! And Haha!, a walkathon was organized in the rural and tribal areas of Shahpur in Thane district in Maharashtra. Using UNESCO’s theme of World Science Day for Peace and Development “Open Science, Leaving No One Behind”, which is perfectly in line with Agastya’s vision, we asked people to “Walk for curiosity, creativity, and humanity,” gathering people along the 25-kilometer journey to join Agastya’s movement.

Agastya’s Innovation Challenge was created to spark curiosity, creativity, and catalyze an innovation spirit among the students and teachers in Maharashtra. Students had to come up with an innovative idea and submit a 3-5 minute video with its explanation. We received over 200 video submissions across the state and have shortlisted our top 20 entries for finals who will be honored during the innovation confluence.

Reaching out to the communities in White Desert Dhordo, Gujarat, we organized a visit for Agastya’s staff and children. With the help of low-cost models, scientific explanations, we were also able to raise awareness about Agastya’s portfolio and our pedagogy.

We don’t just stop with our students but strive to even engage the whole community in to build a cavalry of sparked and educated citizens. We went about this through the creation of opportunities for community participation - through fairs organized in public places which drew large numbers of people, exposing them to Agastya’s pedagogy and scientific models. These fairs were conducted in Gurugram and Bhopal.
Museum of Art and Photography: More than 250 children learned the art of ‘Drawing with Light’ at a 3-day long photography workshop conducted by the Museum of Art and Photography, Bengaluru. The workshop used black and white photos from Agastya’s Abhyavakti program, combined with black and white photographs by renowned photographers to teach children the play between light and darkness. Children also had the opportunity to create their own cyanotype prints.

Reap Benefit: Raising environmental awareness and introducing children to sustainable practices was an integral part of the Innovation Carnival. Reap Benefit, an NGO centered around the same values in Bengaluru lent a helping hand in this process by organizing workshops on topics such as segregation of waste, solving electricity and water wastage in homes and curbing deforestation in urban areas.

ICF mentorship: Veteran coaches from the International Coach Federation coached 32 of our employees on specific capacity building with SMART objectives, aligned to the organization’s goals. The one-on-one sessions were conducted over a span of 5 months.

Broadcom IRIS: Initiative for Research and Innovation in STEM (IRIS) partnered with Agastya for the IRIS National Fair. 20 projects created by Agastya’s children were shortlisted while 5 projects were presented at the final event.

Sonata Software Limited: Through the collaboration with Sonata, our Lab-on-a-Tab program will be further scaled both in terms of technology and the reach.

Collaborators

Many of our programs would have remained incomplete if it were not for organizations and individuals - from a variety of fields - who brought their expertise to improve on and expand them. The collaborations undertaken in 2019-20 proved to be valuable additions to both our children and employees.
Agastya’s Instructor Master Trainers support our instructors through regular sessions on academic topics but also teaching methods and classroom practices. They also conduct regular on-site classroom observations to find out areas of improvement. In 2019-20, 4272 instructors were trained in 56 learning workshops, 16 super refresher training sessions, 27 refresher training sessions, and 15 induction sessions. The Student Learning Objectives method of teaching has been replaced by the Super Class Checklist, which includes objectives like creating excitement in class and sparking curiosity and humanity, all of which reflect Agastya’s thinking and vision.

Nayi Soch

While programs like the Innovation Carnival promote innovation among children, Nayi Soch, which translates to “New Thinking” does the same for our instructors. By encouraging them to create quality models, integrating arts, science, and technology, it keeps the instructors on their feet and develops their ability to improvise and enrich the existing models at Agastya. The competition is held at various levels, with the top 30 ideas being selected for the national level through the process of elimination.

Instructor Development Program

The Instructor Development Program is a part of Agastya’s vision for building a cadre of innovative and dedicated science teachers and practitioners. The course was initially developed to select Instructor Master Trainers but has now evolved to become a capacity-building program open to all instructors. Through the course, science content and teaching quality across all Agastya programs will be improved. In parallel, resource material to help instructors with self-learning will be developed.
Krishnagiri: Titan company limited has launched three ‘mobile science’ Foundation in Kelmamlam block of Krishnagiri district. The lab learning experiences using models to cover topics in physics, civil government schools in the block.

The labs were unveiled by head and corporate sustainability of G Rajendran.

Avishkar provides platform for talents

The project is the brainchild of a team of four engineering students and a rash grad.

BENGALURU: What if someone told you that a robot could climb unharmed and people too are safe? A group of engineering students at the S N Multi-Engineer in the presence of S Nnaik of the Department of Education, Swetha Manjunath, an educationist, and Sudha Rajashanker, Regional Head of Aga John Foundation.

The event saw the involvement of over 3,000 students and visitors, along with the participation of students of 40 schools who displayed various working science models. At the end of the event, five best Science models were awarded with prizes and trophies by Aga John Foundation.

The bus has tablets, computers, a 3D printer, construction tool kits and other devices which will be used by teachers to conduct training sessions.
Sikkim Additional Chief Secretary G.P. Upadhayay Inaugurates Mobile Science Lab At Rhenock School
The beginning of 2020-21 brought with it the COVID-19 pandemic. Instead of deflating our spirits, it compelled us to expand the vision and scope of what we could do in our programs and gave way to a wave of innovation. We jumped into action, prioritising relief efforts in light of the situation. Our regional teams worked tirelessly to distribute food essentials and personal protective equipment like masks in the communities we served.

With the mantra that learning is not restricted to the four walls of a classroom, we shifted our operations online. Coincidentally, this aligned with our goal of digitising elements of our programs, which formed a part of our digital strategy we had decided on earlier. With digital summer camps, we not only spread awareness among children about the pandemic and required safety measures but asked them to do the same with the help of posters and other media, in their communities. The digital modules have been christened Enjoy, Play, Learn and are turning homes in science labs. The adoption of online teacher training programs and classes has been swift and seamless and is expected to be the “new normal” way of conducting our programs for the foreseeable future.

Despite the unanticipated but brief interruption to our operations, the agenda we had set for 2020-21 prior to the pandemic, largely remains the same. We are committed to promoting innovation as a way of life and, at the same time, spark humanity and motivate children to ask more questions in the classroom. At the organisational level, our priority is to expand our reach with the aid of digital avenues. We are intent on expanding our fundraising channels. The changes brought about due to the COVID-19 pandemic will also drive innovation in service delivery. With 20 years of experience behind us and the mettle to tackle any situation head on, we look forward to the rest of the year and the challenges it might throw at us.