How Anil Pradhan is transforming STEM education in India's villages

Anil Pradhan and his spouse and partner Vaishali founded the Young Tinker Foundation

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Fostering innovation: Anil Pradhan with his partner and wife, Vaishali, with a rover designed by students as part of the 2021 NASA Human Exploration Rover Challenge.

Once upon a time, there lived a poor farmer in a village in India. Anil Pradhan would tell you to stop the story right there.

"Why is it assumed and accepted that if you are a farmer, then you must be poor, and if you are poor, you must live in a village? Why is a village always considered 'poor' in any narrative?" asks the 28-year-old educationist from Odisha, who was recently awarded the prestigious

Rohini Nayyar Prize for rural development. Named after the late economist, academic, author and Planning Commission member Rohini Nayyar, the prize recognises significant contributions to rural development.

Pradhan's epiphany came when he returned to his village, Baral, in the river island of 42 Mouza, after his studies in Bhopal, where his family had moved after his father, a Central Reserve Police Force employee, was transferred there. After getting admission to an engineering college in Odisha, he returned to find that time in his village seemed to have almost stood still.

While there were more schools and students, Pradhan found that the quality of education was lacking. "There was no conceptual understanding among students. No marks for creativity. Students were just memorising to pass exams, not really learning," he says. "I felt that people here were not getting the opportunity that I had. Not everyone's father is fortunate enough to move to a city to educate their kids." This led to him to asking why education levels remained poor in Indian villages. "I started thinking: why is it not improving?"

In response, Pradhan and Vaishali, his partner and spouse, founded Young Tinker Foundation, a non-profit organisation dedicated to making STEM (science, technology, engineering and mathematics) education accessible to students in rural India.

Starting with a tin shed and three students on the riverine island in Odisha, the foundation is now spread across Telangana and Tamil Nadu. It has launched ambitious initiatives like Young TinkerSpace (YTS) and Tinker-on-Wheels (ToW), which take mobile science labs to different schools, reshaping rural education. With WhatsApp groups and a YouTube channel with two lakh followers, the foundation has helped nearly three lakh students, with Pradhan aiming to reach one million by 2026, including expansion into Delhi.

Pradhan calls his approach "ICE breaking": I stands for intent, cultivating the right mindset in students, teachers and parents about learning beyond exams and contributing to nation building; C stands for content; and E stands for environment. The ToW project supports the latter by using an autorickshaw to tow a mobile learning lab, giving students hands-on experience in artificial intelligence, machine learning, robotics and 3D printing. The lab helps bridge the digital divide, equipping students to bring science to life in ways that go beyond textbooks and classrooms. "Our programme cultivates innovation, problem-solving and critical thinking skills, preparing students for success in the 21st century," says Young Tinker on its website.

Initially funded by Pradhan's scholarship money, the foundation now gets support from organisations such as the US Consulate in Odisha and NMDC Ltd. The Rohini Nayyar Prize of Rs10 lakh will bolster his expansion plans and grand vision. "India needs people who can create something. The education system itself has to be reimagined," he says, adding, "If not we, then who?"