Face shield by IIT, Madras; (left) Nishaad's contactless hand sanitiser; (below) cardboad beds designed by the Anant National University, Ahmedabad

By BINDU GOPAL RAO

Face shields, aerosol obstructors, recyclable beds... these last three months have seen students find their foothold in the world of innovation. From IITs to government colleges and schools, labs are giving birth to budding inventors. Nishaad Chachra, a Class VIII student of Vibgyor High Marathahalli, Bengaluru, has more on his mind than just online classes and Zooming with friends. He recently developed an automatic and contactless hand sanitiser. Powered by an infra-red sensor, the device captures human movement and executes the commands accordingly.

Protection is the need of the hour. Students at the Indian Institute of Technology, Madras, made it their motto as they developed affordable face shields. Earlier manufactured using 3D printing, the students moved to the 'Injection Moulding' technique as demand climbed. It helped them quadruple the production rate at a reduced cost. Financial help is also pouring in. The Lovely Professional University, Jalandhar, has set up a $1-million fund to support research and innovation. Online hackathons are also awarding the best practices.

Six engineering students from the Manipal Institute of Technology recently bagged the second prize of $5,000 at the CODE19 online hackathon—hosted by US-based Motwani Jadeja Family Foundation. Their project, TeleVital, enables remote diagnosis by capturing their vital statistics through a webcam and browser. The winning entry to bag $10,000 was iClassroom—created by students of the Government College of Engineering, Kannur, Kerala. The project connects students and teachers through social media-type interface.

Other IITs have upped the ante too. IIT Guwahati students have designed and developed intubation boxes that function as aerosol obstructors. These boxes are placed at the head of the patient's bed to limit the flow of virus-laden droplets during intubation. IIT Delhi researchers and PhD students also developed a web-based dashboard for predicting the spread of coronavirus. Called PRACRITI, it gives detailed state-wise and district-wise predictions for a three-week period and is updated weekly.

For some, sustainability is the motivating factor. Anant National University, Ahmedabad, has designed visors, corrugated cardboard beds and separators for recovery facilities. "We used materials that can be easily sourced, and are long lasting and recyclable," says Dhaval Monani, Director of Affordable Housing. Advaita Jairam, a second year B. Des student, adds, "A good design is a design that is meaningful."