Cows and effect

Cows — and some creativity — drive a unique experiment launched by the One Laptop Per Child foundation

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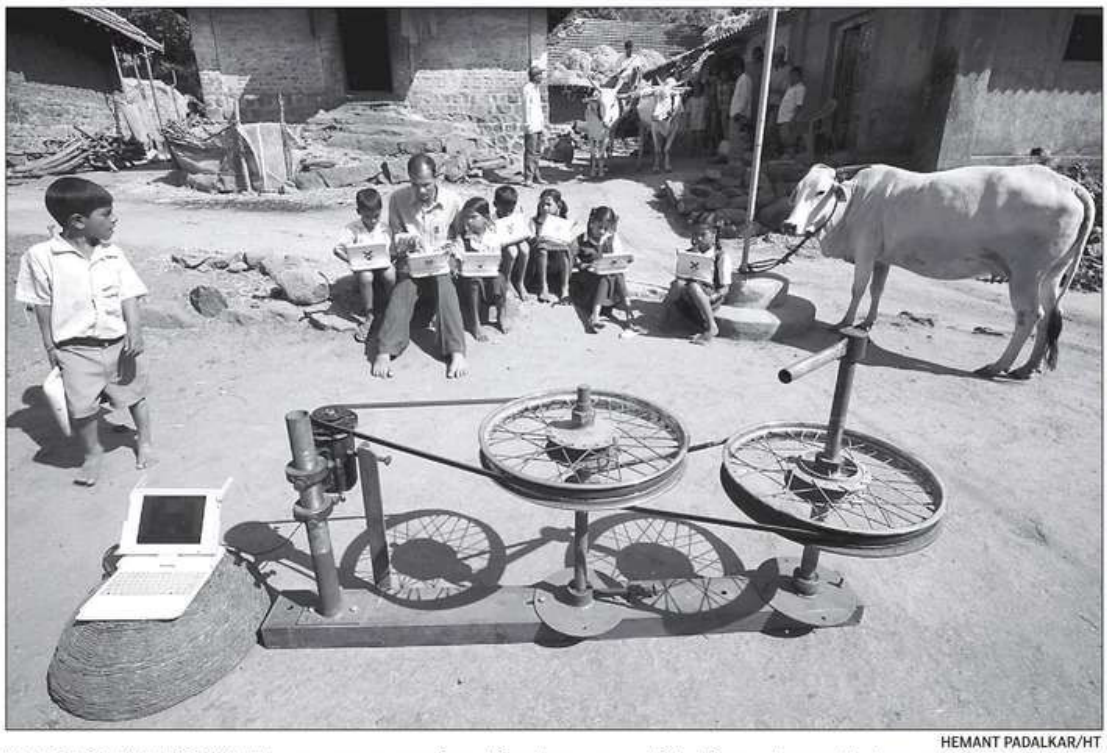

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VILLAGE ON THE M(O)OVE: The cow power experiment involves a cow which drives a dynamo that powers the laptop; (below) Sandeep Surve, the teacher, explains a concept to his students with the help of the XO laptops

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AT VILLAGE Khairat in Raigad district, about 40 km east of Navi Mumbai, the scene seems surreal. Just outside a one-classroom school set amid a cluster of huts, a teacher and 22 children carrying colourful laptops are conducting a unique experiment that makes a bullock cart stop in its tracks.

What I see is a contraption that connects the two wheel-rims of a motorcycle to the dynamo of an old Fiat car. The rims are connected by a belt and they act as pulleys. They are in turn attached to a cow that goes round, making them revolve. The other end is connected to a laptop.

A cow-powered laptop? Bizarre as that sounds, it is not hard to see why it works here, in village Khairat, where every household has a few cows and the villagers, who belong to a nomadic tribe, sell milk for a living. The idea came from Arjun Sarwal, a student of the Delhi Institute of Technology and volunteer with the One Laptop Per Child (OLPC) foundation. "In these remote villages, there is often no power for up to seven hours a day because of load-shedding. Solar panels are not cheap and generators have recurring costs. So we thought of this alternative source of energy. With one cow, we can generate about 200 watts which is enough to power 20 laptops," says Sarwal, over the phone from Delhi.

"We are still fine-tuning the circuitry and we will add one more rim to achieve the desired rpm (revolutions per minute)," says Amit Gogna, deputy manager of Reliance Communications (ADA group) who is part of the OLPC team.

The OLPC foundation is the brainchild of Professor Nicholas Negroponte of the Massachusetts Institute of Technology and was launched in 2002 after he found how connected laptops transformed the lives of children and their families in a remote Cambodian village.

Through its XO laptops, designed specially for children by OLPC with flash memory instead of a hard drive and Linux as its operating system, the organisation aims to provide children of the developing world "a means for learning, self-expression and exploration". The NGO also has a 'Give One Get One' programme in the US and Canada where people can donate a laptop to a child in a developing nation and receive one for their own child.

One teacher, many laptops

"They wanted to have the pilot site in a remote village, the idea being that if it clicks in extreme conditions, it will do so in other places as well," says Gogna. The Khairat school, which falls under the Centre's Sarva Shiksha Abhiyan scheme, has four divisions, but just one classroom and one teacher. Sandeep Surve, the teacher, welcomes me to the commotion that is his classroom and almost immediately, Vimal Gore, a 4th standard girl, clicks my photo on her laptop. When I thank her, she nibbles on her laptop in embarrassment. All the other students crowd around her to see how the picture has turned out. They needn't have. Their laptops operate on a mesh network that helps them share messages and images.

About two years ago, OLPC had got in touch with the Union government's Human Resources Development ministry to launch its scheme in India but the government declined financial support. It was only recently that Reliance and OLPC agreed to collaborate on the project. Learning consultant Carla Gomez then came down to Khairat from Boston to help launch the pilot project and interact with the teacher, students and their parents.

New way of learning

The XO laptops, designed to set children on a path of self-learning, landed in India in September. The OLPC team including Reliance vice president (IT) Bhalchandra Joshi, who heads the project, Gogna, Gomez, Sarwal and another engineering student from Delhi, Manushi Gupta, then paid several visits to the school, set up the server and distributed the laptops.

One practical benefit for Surve, who has to juggle with students who learn at different levels is that while he teaches one set of students, others keep themselves busy with their laptops. "Besides, the wonderful thing is that they learn themselves and discover new features that even I don't know," he says. "I use the laptop mainly to teach English and Maths but I also try to create new projects linked to their subjects."

For instance, he has made illustrations of the water cycle on eToys and has recorded the 'A for Apple' alphabet sequence in the laptop. "For the concept to work fully, we need to have keyboards in Indian languages. Work is on to equip the XO computer with keyboards with the Devnagari script," says Gogna.

Happily, the children are allowed to do what they want with their laptops and not warned every other minute to handle them with care. Some of them swing the laptops, others drop them on the ground. When second standard student Datta Gopinath enters the class a little later than her mates, she plugs her laptop to the charger near the entrance and starts working on it. "What do you like most about your laptop?" I ask her. "That I can record songs on it from TV," she says, playing a few for me.

The land for the school was donated by the family of Mohan Zore, 55, whose grandchildren now study in the Khairat school, while a philanthropist from the region footed the bill for the building in 2001. Zore himself never studied beyond the second standard. "The nearest school was two and a half kilometres away and during the rainy season, it was so difficult to reach," he remembers. Now, he watches his grandchildren navigate worlds far beyond Khairat with a proud smile on his face.

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