

## Intelligent Computing Chip

May, 2010

# More than a hole in the wall!

Hole-in-the-Wall, a unique project based on the theory of minimally invasive education and spearheaded by Dr Sugata Mitra, is successfully spreading computer literacy amongst disadvantaged children in remote areas of the country. **BY PRIYANKA TILVE**

If you give a young child a new toy, it will be only a matter of a few minutes before he/she has discovered how it works. It's the innate curiosity and the need to explore that children possess which fuels these discoveries. This formed the basis for a project headed by Dr Sugata Mitra, then the Chief Scientist at NIIT, who was curious to see how disadvantaged children with limited access to formal education would adapt to computers if given a chance. What started in 1999 from a slum in Kalkaji in Delhi, went on to reach remote areas of India and has even been adopted by several other countries around the world. We spoke with him to find out about this unique project, christened by the media as the Hole-in-the-Wall project.



Dr. Mitra with some children near the Hole in the Wall kiosks

### **Q** What was the inspiration behind this unique project?

**A** Watching urban, rich children and how good they were with computers, I thought why not see if all children, no matter who they are, can do this. In 1999, my friend, Vivek, built a computer sunk into a wall near our office in Kalkaji, New Delhi. The screen was visible from the other side of the wall. A touch pad was built into the wall as well. Children came running out of the nearest slum and stuck to the wall like glue. A few hours later, a visibly surprised Vivek said the children were surfing the web.

### **Q** How did you monitor the data flow? What were your findings?

**A** In 26 locations, with 100 computers standing in remote villages, our field observers began testing. Focus groups were tested for nine months and the results compared with control groups and other frequent users. An estimated 40,000 children used these computers. They have all made themselves computer literate. The average test scores stand at 40 percent in nine months. We have our proof of self-regulated learning. And this time we

know that it will happen anywhere in the world, to any child, in any climate.

We found that groups of 6 to 13 year-old children do not need to be "taught" how to use computers; they learn by themselves. Their ability to do so seems to be independent of their educational background, literacy levels, their social or economic level, ethnicity, place of origin, gender, genetic background, and even intelligence.

### **Q** What has your most amusing discovery been with the children using the computers?

**A** A little girl who changes the name of DLL files so that others can't play her favorite game!

### **Q** Since these PCs are installed in open spaces, how do you ensure that they remain in working condition even under extreme weather conditions?

**A** Touchpads would fail within weeks, Key tops would vanish, power conditioning would cost more than the PCs, and dust would get into everything! Between 1999 and 2002, my colleagues, Sanjay Gupta and Ravi Bisht, made inventions that solved all these issues. They invented new mice, keyboard covers, reversed exhaust fans and many other little things. They made it possible for ordinary PCs to work outdoors.

If a computer were to hang in a remote village, would someone have to

## **THE TECHNOLOGY BEYOND THE WALL**

The mouse has six touch sensitive spots; four to move the cursor and two for left and right clicks. It is completely solid state and has no moving parts. The keyboard is covered with a perspex cowl that has an opening designed such that only small hands will go in. An aluminium sheet with cutouts exposes only the keytops, so that keys cannot be

removed. The entire enclosure is maintained at a positive pressure by blowing air into it through a filter. This ensures that air spills out of the structure and prevents dust from entering. An environment sensor records the temperature and humidity in the enclosure and reports them back over the Internet.