



Digital Learning India Award for the Civil Society/Development Agency of the Year

Name of the project: Hole in the Wall Education

Implementer

Name : Abhishek Gupta Address : Hole-In-The-Wall-Education Limited 8, Balaji Estate, Minerva building, Sudarshan Munjal Marg,

Kalkaji, New Delhi-110019, India City : New Delhi State : New Delhi

(1) List of various initiatives which you handled or handling. Give the project details, your success story(s), and project management. [The listed projects should be functional and not be more than three years old] (max. 500 words)

Hole-in-the-Wall Education's various experiences spread over a period of 9 years, across 350 diverse geographical locations and continents, reflects multiplicity of stakeholders. This varies from governments, private sector, non-governmental organization, corporates, civic bodies, foundations, and international organizations.

In India, one of the leading partners of Hole-in-the-Wall is the Education for All – Sarva Shiksha Abhiyaan (SSA) arm of states like, *Jammu & Kashmir, Arunachal Pradesh, Rajasthan, Delhi, Mizoram, Nagaland, and Jharkhand*. Under the over-arching objective of impacting the learning outcomes of socially and economically disadvantaged children, HiWEL has also addressed various specific needs of each partner state. In Delhi and Rajasthan the focus is largely on impacting the out-of-school children, whereas in states like Mizoram and Nagaland, it is to encourage IT literacy through PC penetration. In other areas, the effort is to overcome deficiency of learning resources.

Moving ahead, HiWEL, in conjunction with the Government of Kerala (Department of Social Welfare) installed learning stations in the juvenile homes across the state. Juvenile homes generally cater to children who are in conflict with the law, or from the broken or

destitute families, street children. These children many a times are devoid of certain basic rights which also include right to education. Through this project HiWEL has addressed the problem related to lack of educational facilities for the children living in juvenile homes. Furthermore, apart from making an impact on the cognitive and affective skills of these children, HiWEL Learning Stations have also been able to boost the confidence levels of certain Children with Special Needs (CWSN) with the usage of interactive educational content in the juvenile homes.

In Africa, the primary school enrollments and literacy rates are among the lowest in the world. It also has the lowest primary completion ratios. Children and youth not only need “primary literacy,” but also need to build their life skills. With assistance from the Government of India, HiWEL Learning Stations have been set-up in eight African countries (*Botswana, Mozambique, Rwanda, Uganda, Zambia, Swaziland, Nigeria, and Namibia*).

Following are some of the success stories that have been reported from various HiWEL Sites:

1. In the absence of a teacher, children learn from other children who could be older or younger children, friends or siblings. There are also times when children teach and learn from each other, when learning is a two-way process. For instance at one of the Learning Stations, Puttappa, asks his friends, “Does anyone know where I should go to draw and put colors?” Bhavya says, “Yes, I know painting-I will show”. She shows Puttappa how to select and paint.

2. Differently-abled children have found acceptance in the social dynamics of the Learning Station. Sumit, an 11-year old child does not go to school as he suffers from epileptic seizures. When other children of his age are in school, Sumit spends some time at the Learning Station. In the process, he learns the basics of computer operations as well as English.

(2) Briefdescription of nominated project/initiative, including purpose of the project/initiative (max. 500 words)

Hole-in-the-Wall Education Ltd. (HiWEL) is a joint venture between NIIT Ltd. (IT training & Development Company) and the International Finance Corporation (a part of The World Bank Group). Initiated as an experiment in 1999 in Kalkaji and established as an organization in 2001, HiWEL facilitates learning for the marginalized children, through unconditional and public access to computers.

The Concept

Minimally Invasive Education is an original invention composed of significant innovations in hardware technology, software technology, and cognitive design. It is the first attempt at applying the principle of self-organising systems to primary education. Self-organising systems is representative of a new area in theoretical physics.

How it Works

Shared outdoor public computers, incorporating self-protective hardware and software are combined with voluntary group self-learning by all the children of a given community, whether in or out of school. In five or six years' time, the oldest of these children, now 13 or 14, will be the first computer-literate adult generation of their communities.

- The computers, typically located in a government school playground or in the community are unsupervised and are available to the children at least eight hours a day.
- Working in self-organized groups and helping each other, the children typically navigate within minutes and begin to browse in about an hour. Within three months they achieve basic computer literacy, and by nine months have achieved the proficiency level equivalent to the skills of most modern office workers.
- Stimulating educational games and content tested with other children of the same age group provides the “minimally invasive” educational inputs that catalyze change in educational outcome.
- Curriculum related content is also provided to help children with their schoolwork. Teachers have been very positive about learning stations because of the children's increased interest in learning, higher enrollments, and educational games that take care of rote learning, allowing them to concentrate on higher level tasks like mentoring students and leading class discussions.

Impact

About 300,000 out-of-school and in-school children, in India, Africa and Cambodia, have been directly impacted by HiWEL in terms of the following research-based outcomes:

- Acquisition of functional computer literacy
- Improvement in academic performance
- Increase in confidence and self-esteem
- Increased collaborative behavior

Apart from data-based findings, there is consistent anecdotal evidence of large-scale impact on school enrollment, retention, concentration, attention span and problem-solving ability. Hole-in-the-wall is being widely disseminated in India and overseas, both through direct sales of the technology and consultancy services, and through contractual partnerships with government. The low cost of the additional, proprietary hardware and the fact that it makes much more effective use of the computers already owned by schools—200 children can become computer literate using one HiWEL computer—make it a very effective and affordable multiplier of digital literacy and basic education. Through learning stations, even children with little or no access to school gain entry to a world of quality educational content that supports their education and leads to increased confidence and self-esteem.

(3) Brief description of the key persons who are involved in this project/initiative. (max. 350 words)

Minimally Invasive Education (MIE) a new educational technology was developed by Dr. Sugata Mitra to achieve mass computer literacy at a cost that makes it available to all children. It employs more efficient modern learning models like collaborative constructivism and a series of interlocking innovations, both technological and pedagogical. The computers are made available free of charge and no structure is imposed on when, how or what children learn. Through what is arguably the largest experiment in primary education in recent times, Mitra went on to discover that the “playground” computers he had invented would:

1. 1. Produce computer literacy
 2. 2. Improve math and English scores
 3. 3. Change social values
 4. 4. Improve school attendance
 5. 5. Reduce school dropout rates
 6. 6. Reduce petty crime
 7. 7. Generate local goodwill
- HiWEL today is a young team of 18 people coming from diverse backgrounds with vast experiences of their respective domains like IT, management, research and social work. Teams

within HiWEL are responsible for areas related to Product Development, Implementation, Business

Development and Monitoring & Evaluation (M&E).

(4) How is the project innovative? (350 words)

Hole-in-the-Wall Education was conceptualized to improve the quality of teaching, motivate children to complete school, and to ensure that skills of youth meet the needs of India's emerging economy.

Component Innovations of Hole-in-the-Wall Education

The innovation with respect to HiWEL lies in the idea of a path-breaking learning methodology (MIE) as well as in various patented hardware equipments such as ToBu, Auto.P.Sy. These aspects can be explained in the following manner:

1. 1. The Learning station is set up normally in the playground of the school. This setting requires the children to self organize, learn from peers and learn in a fun environment which leads to development of their personality traits like team skills, leadership abilities and communication.
2. 2. Learning stations are equipped with special monitoring software called the *Remote Monitoring System (RMS)* to keep a record of the progress of children. This software helps in tracking the operational status of the systems, application and internet log. The RMS allows the researchers/government to analyse the utilization of computers by children and thus determine the impact made by the learning station.
3. 3. Hole-in-the-Wall stations have been designed to overcome the problem of irregular electricity supply, as it has the option of solar power panels. Furthermore, to tackle the issues related to basic operations (switch on/off) and knowledge of computers in the remote or rural areas, a patented hardware device called Auto Power System (Auto.P.Sy) was designed for facilitating safe-shutdown through a soft switch. It also monitors and reports the state of AC Mains Supply and shuts down the system in case of inadequate supply.
4. 4. The Learning stations were conceptualized with an extremely rugged hardware which allows children to access computers without supervision, in an unrestricted manner, without running the risk of damaging the computers and accessories. In continuation with

this concept a touch button (ToBu) mouse was developed on a fixed steel plate.

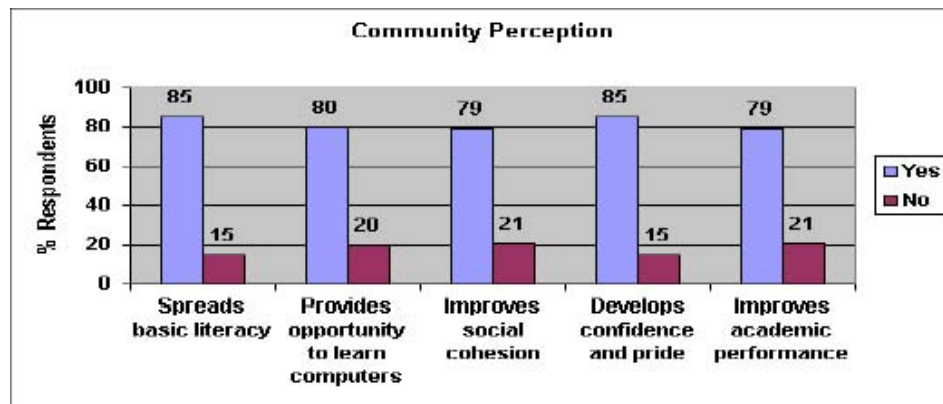
ToBu has the same functionality as a normal mouse, but is extremely rugged and damage proof.

(5) Achievements of the project/Outcome of the project (max. 500 words)

Over the years there have been a number of different agencies ranging from government departments to

market research firms that have conducted a lot of research studies on HiWEL as a concept and its impact in diverse settings. Various assessments were conducted to measure academic achievements, behavior changes, personality profile etc. The results suggest about an increase in inclination of drop-outs towards regular studies, regular accessibility of learning stations by children, assimilation of content and hence an improved academic performance.

A research conducted by the Delhi Government at Madangir in the year 2004, revealed that in terms of community perception the learning stations are beneficial for children across various parameters as displayed in Graph 1.



Graph 1: Research Results published in Delhi Government Report

More recently, a study conducted by the department of social welfare¹, Kerala suggested that with the installation of HiWEL learning stations there has been a significant improvement in the cognitive skills of children living in the juvenile homes. The report also revealed that this activity has provided a sense of self-worth to the children with special needs, apart from enhancing their thought process and improving their inclination towards both education and technology.

Right from its inception stage, hole-in-the-wall both as a concept and as a product has been recognized and appreciated through the medium of various awards. The latest being the **'digital**

¹ <http://www.hindu.com/2009/04/01/stories/2009040152390200.htm>

opportunity award' presented by the **World Information Technology and Services**

Alliance

(WITSA) in the year 2008, for HiWEL's path breaking work in spreading computer literacy and improving the quality of education at the grass root levels. Following table enlists all the awards:

Year	Award	Conferred By
1999	Raizada Award	Computer Society of India (CSI), India
2000	Best ICT Story	World Bank
2000	Best Social Innovation of the Year-2000	Institute of Social Inventions, UK
2003	Full length documentary feature film 'The Hole in the Wall' (2003), received more than 20 Internal awards at major films festivals	Gil Rossellini and Global Vision
2004	The Telly Award for the documentary "The Hole in the Wall"	International Cable Broadcasters Association
2005	Dewang Mehta Award for Innovation in IT	Ministry of IT, Government of India
2006	Best Education Research Article	The Communication of Research Special Interest Group of the American Educational Research Association
2007	Best Book Award for book "Hole-in-the-Wall"	Indian Society for Training and Development

(6) Give details of the challenges that were faced while implementing the project and how were they overcome? (max. 350)

A lot of problems as well as diverse challenges were faced during the implementation and evolution of HiWEL as a product. Following text explains various steps and innovations that were adopted to overcome these problems:

S.No	Challenges	Solution
1.	Durability and strength of the structure that protects the Computer and its peripherals in diverse settings.	<p>1. Low-cost modular enclosure® that enables the usage of mass-market desktops with standard keyboards. 2. Steel and Clear Polymer Panels®: The monitor, speakers and CPU are protected from damage and pilferage by a steel and clear-polymer frame. 3. Keyboard Protective Cover: The keyboard has a protective steel cover that also reduces dust accumulation. 4. Keyboard Mesh: The keyboard mesh protects keyboard by making key-tops irremovable from the base. 5. ToBu®: Touch sensitive flat bed mouse was developed on a fixed steel plate. Since the installation of Tobu Mouse, the reported mouse-related damage rate has come down to 0.5%.</p>
2.	Electricity Supply and its quality	<p>1. Coordination with various local departments for installation of electricity connections. 2. Installation of suitable stabilizers/servo options in case of voltage fluctuations and earthing related issues. 3. Provision of Solar Power Panels in remote locations with no arrangement of electricity supply.</p>
3.	Data Capture with respect to utilization of Learning Stations	<p>1. The Remote Monitoring System ® (RMS) captures data on computer uptime and application usage and the RMS viewer helps administrators analyze this data. 2. SMS system has been developed which sends SMSs using any GSM network to a central server on a daily basis and provides the updated information about the health of the Learning Systems. This is mostly being used on sites with no internet connectivity.</p>

4.	Non-availability of computer literate facilitators in rural areas	<p>1. Automated Power System (Auto.P.Sy®) The Automated Control System, a sub-system of Remote Monitoring System protects computers from human mishandling and power fluctuations.</p> <p>2. Single Click On/off Switch ® – In order to facilitate opening and closing of learning station by anyone, a mechanism has been designed that can switch on and shut down the machines without any computer input from keyboard/mouse.</p> <p>3. Windows Anti-hang Utility ® is a software utility that protects the system from user error, increases the fault tolerance of the operating software and prevents it from getting into a hang condition.</p>
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(7) Please furnish any other related useful information about the nominated initiative that you have not been able to provide in your earlier responses.

Please refer to HiWEL's Media Kit mailed to e-India's award office.