

The Digital Doorway Computer Literacy through Unassisted Learning in South Africa

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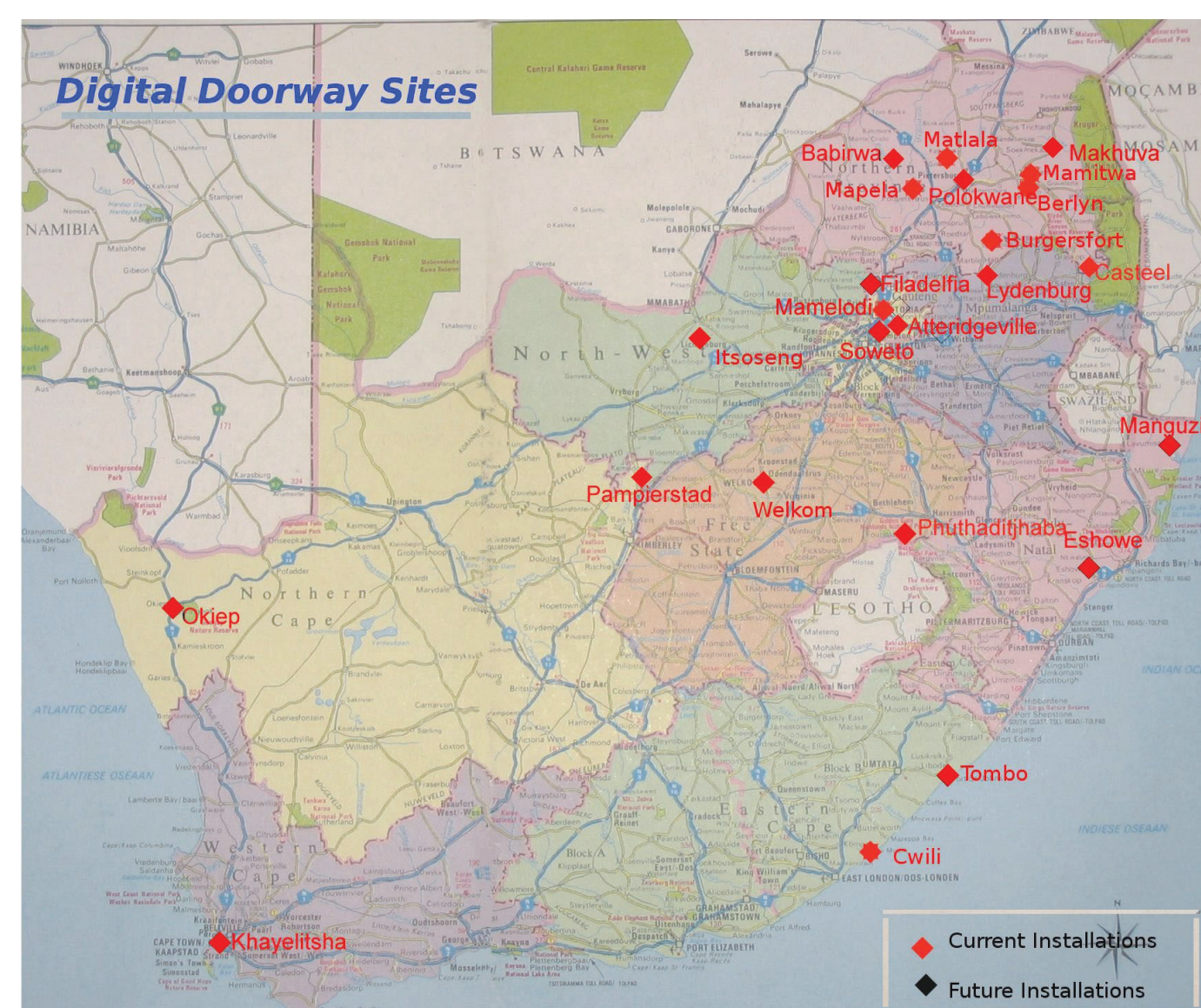
INTRODUCTION

The Digital Doorway is a joint initiative between the Department of Science and Technology (DST) and the Meraka Institute (managed by the CSIR), with a vision of making a fundamental difference to computer literacy and associated skills in Africa. Underpinning the project is the idea of people's inherent cognitive ability to teach themselves computer skills with minimal external intervention. For this to happen, computers must be easily accessible to potential learners in an environment conducive to experimentation. Apart from the ability to read text, literacy also involves image and screen literacy, particularly information navigation. Through access to the information on the Digital Doorway, a new way of learning by "discovery" rather than by "lecture" becomes possible.

Initially modelled on the Hole-In-The-Wall project, developed by the National Institute for Information Technology (NIIT) in India, the Digital Doorway seeks to verify the hypothesis of Dr Sugata Mitra of NIIT that minimally invasive education (MIE) is a viable form of education.

Robust four-terminal Digital Doorway computer systems are deployed in communities in an environment in which members can learn through experimentation.

The project envisages a sustainable network of at least a thousand Digital Doorways throughout the country, reaching even the remotest areas. Through improved computer literacy, all South Africans can be included in the information society.



METHODOLOGY

Development Path

The improved, Open Source-based, four terminal Digital Doorway evolved from the original Windows-based single terminal configuration. Robust and vandal proof, the current Digital Doorway's modular design allows easy reconfiguration and assembly, and follows international best practice in terms of ergonomics.

Content

Each Digital Doorway serves as both a tool for computer literacy development and a source of information on a range of subjects. The content includes the Open Office suite, educational games and programs, an introduction to computer terminology, scientific software, 10 000 books

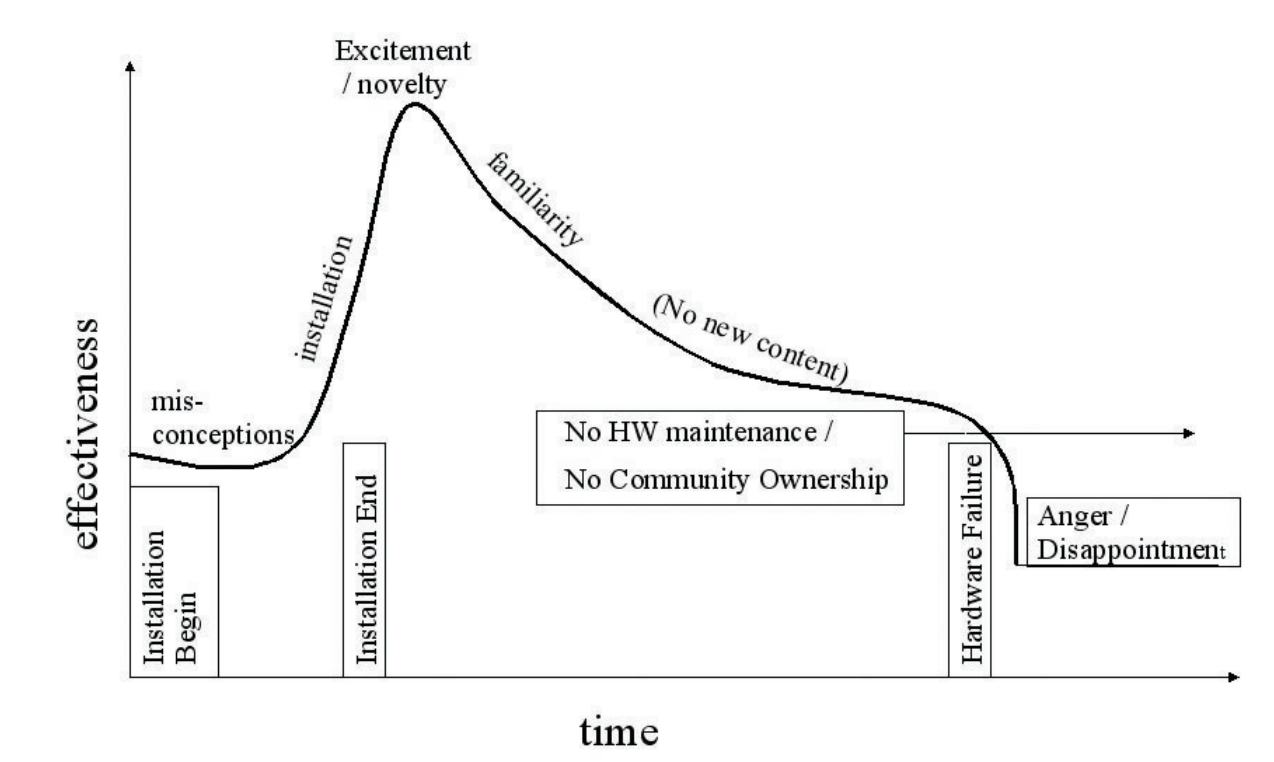
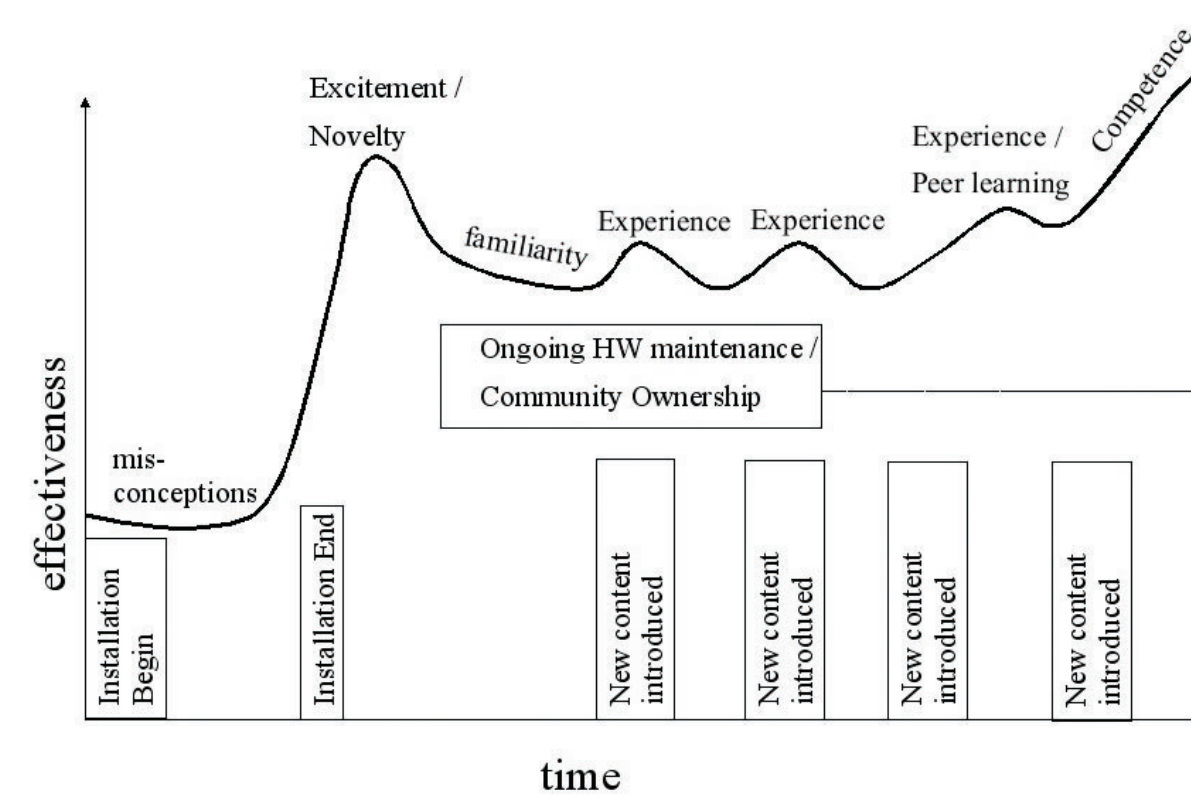
from project Gutenberg, a snapshot of the Wikipedia, and numerous other applications for children and adults.

For lasting benefit in a community, the Digital Doorway must be fully operational at all times with fresh, locally relevant, challenging and informative content.

Research Methodology

Observational research is conducted by analysing data on participants, using information gathered by the CCTV camera as well as screen captures. In this way, behaviour of the participants can be observed directly, rather than relying on self-reported behaviour. Members of the technical support team also conduct informal interviews with participants and community champions on site.

RESULTS



Results obtained from the installed Digital Doorways are positive. Highlights are summarised below:

- The age of users ranges from primary school children to young and older adults;
- Different groups are present, with group size varying from four to twelve;
- Familiarity promotes spontaneity, along with longer visits and demonstrated confidence;
- Previously computer literate users become the "leaders" of the various groups;
- Most spontaneous participants are younger children in larger groups of 12 and more;
- Typical visits are between 30 and 60 minutes;
- Passive participation starts from installation, with spectators moving from one workstation to the other;
- Co-operative learning is common, with children showing one another what to do;
- Peer learning amongst the younger children is by competition, whereas collaboration is the learning method of choice for young adults and adults; and
- Participants, especially the children, seem content to explore until they achieve the desired outcome, rather than ask for assistance.

Benefits

Initial results indicate the following benefits:

- Improved computer awareness and literacy;
- The opportunity for users to interact with technology on their own terms;
- Customised content and applications to meet specific community requirements;
- Low maintenance in the long term;
- Promotion of computer literacy without external intervention; and
- Transfer of learning to the community.

CONCLUSION

ICT will continue to play an increasingly important role in education. Unfortunately developing countries are missing out on many advantages afforded by ICT, due to the lack of facilities and teachers trained in ICT. Unsupervised learning, or in the words of Prof. Sugata Mitra, minimally invasive education (MIE), provides a mechanism to promote mass computer literacy in developing countries.

The next phase of the Digital Doorway Initiative is aimed at identifying and responding to issues such as implications of new pedagogic approaches and creating an enabling environment for deriving maximum social and economic benefit from the technology, with due consideration for cost-effectiveness and sustainability.