

The Hole In The Wall

....and Beyond

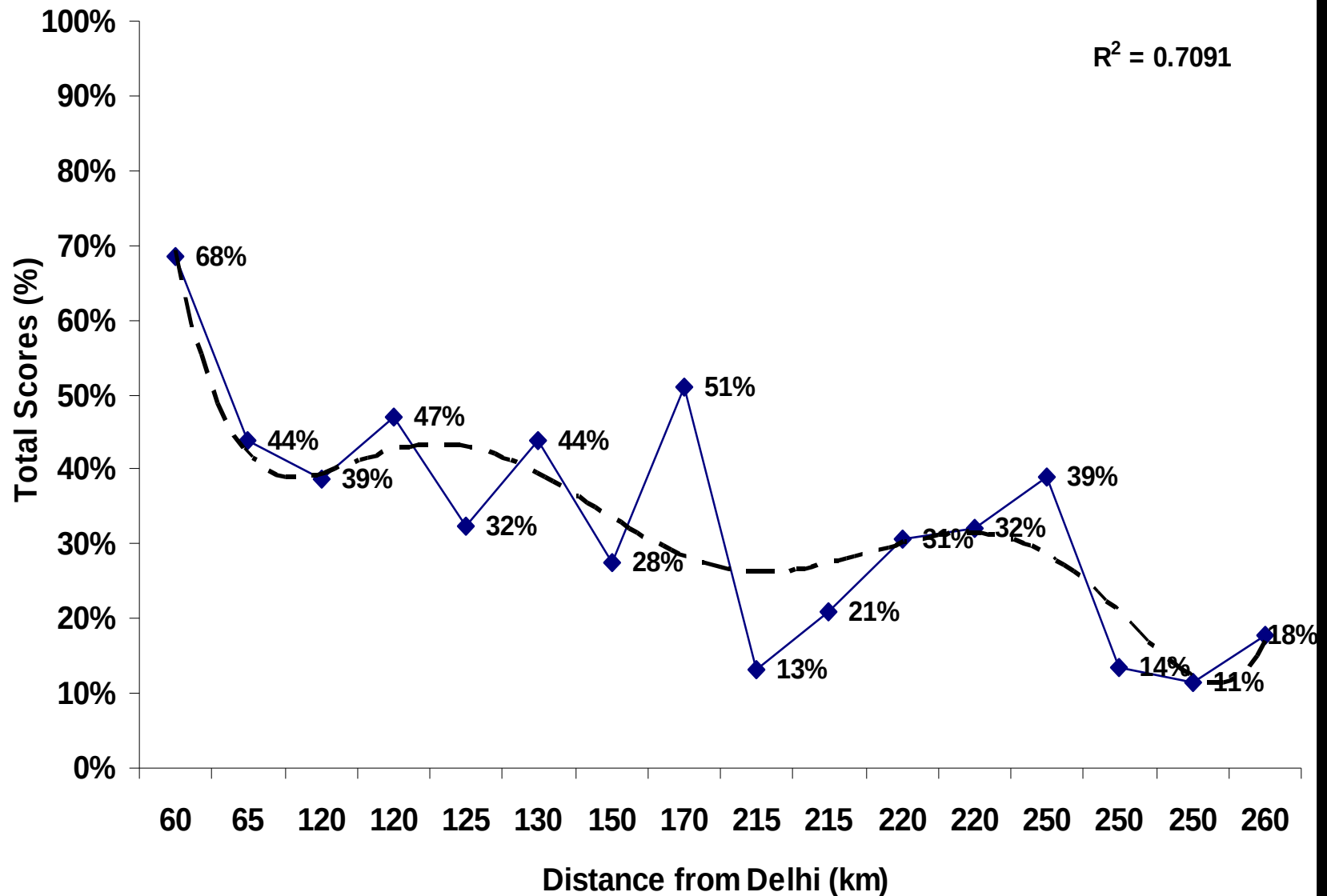
Sugata Mitra, MIT Media Lab, USA and Newcastle University, UK

**There are, and will be,
places in the world,
where schools cannot be built,
or where good teachers
cannot or do not want to go....**

Remoteness and the quality of education

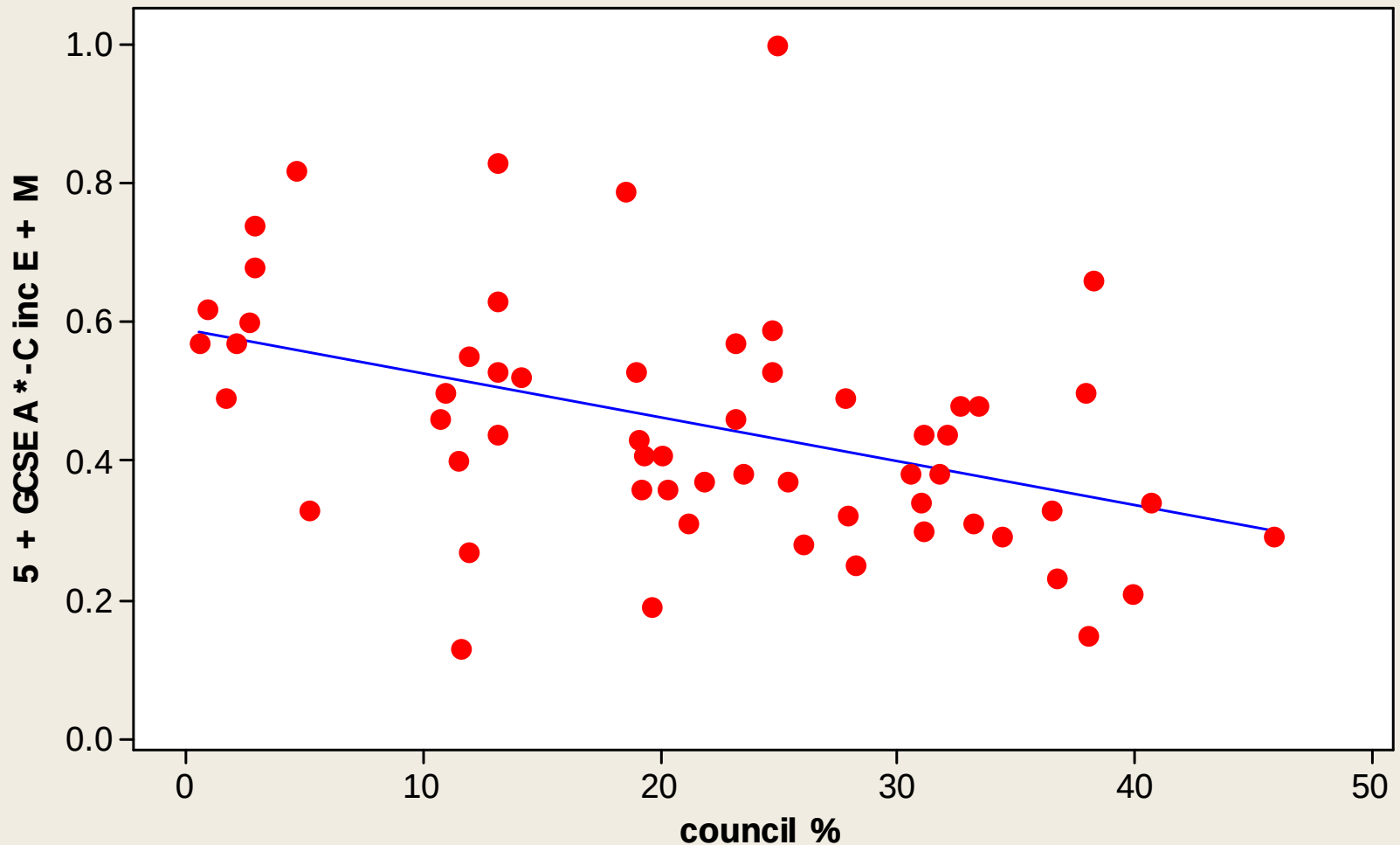
North Eastern India

Total Performance vs. Distance from Delhi



Remoteness and the quality of education North Eastern England

Scatterplot of 5 + GCSE A*-C inc E + M vs council %



A photograph of three children looking through a rectangular opening in a weathered, light-colored wall. The child on the right is a girl with dark, curly hair and a blue headband, wearing a light blue shirt. The child in the middle is a boy with dark hair, wearing a striped shirt. The child on the left is partially visible, wearing a patterned shirt. They are all looking out through the hole. The wall is made of rough, textured material, possibly concrete or plaster, and the opening is framed by a simple wooden or metal frame. The scene is brightly lit, suggesting daylight.

1999 - 2001

The Hole In The Wall





Technology



Sensors and remote monitoring

RMS

Safe Desktop

Anti-hang



Cameras

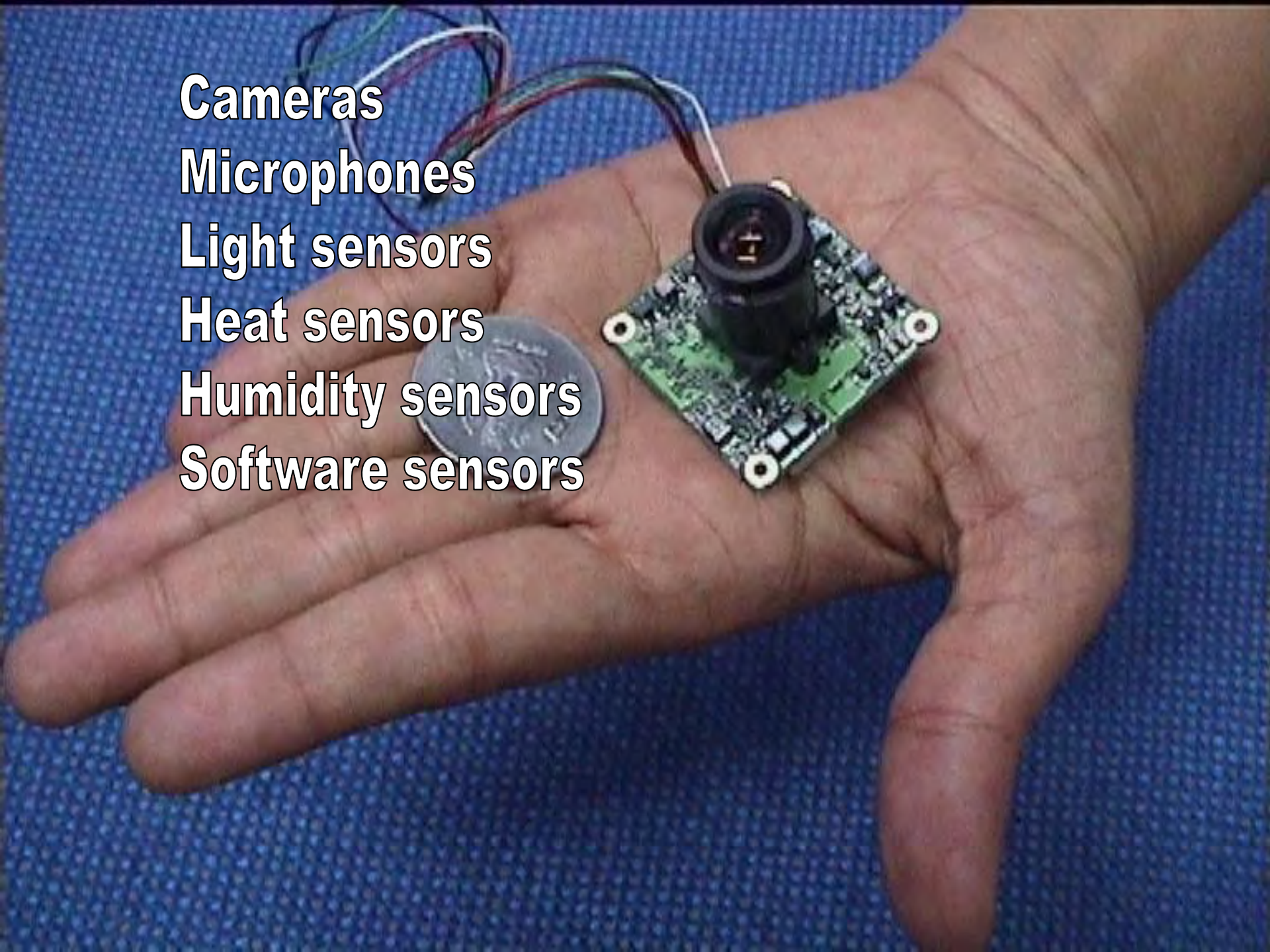
Microphones

Light sensors

Heat sensors

Humidity sensors

Software sensors



Engineering

PCs are not meant to be kept outdoors....



Remote monitoring data

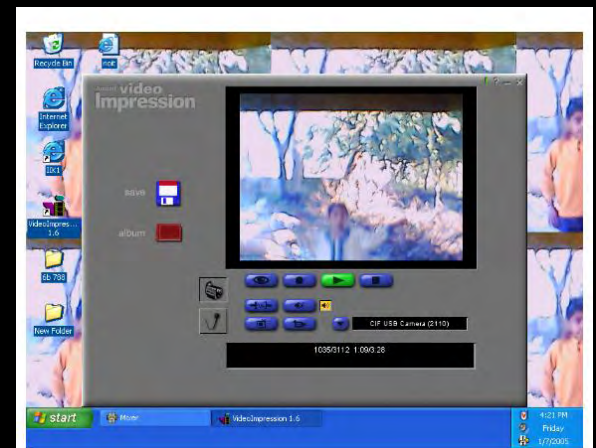
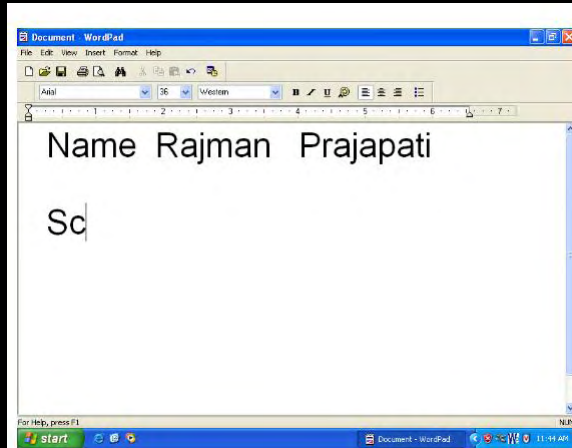
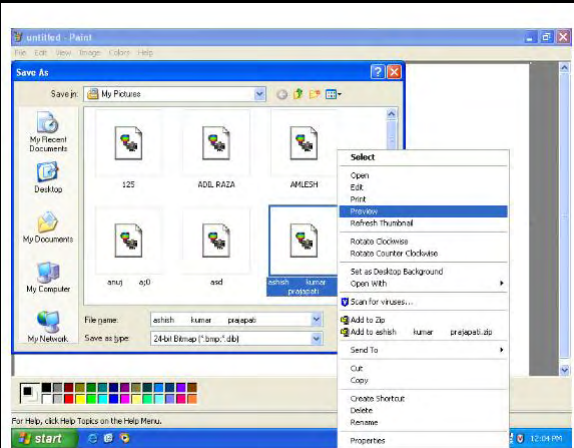
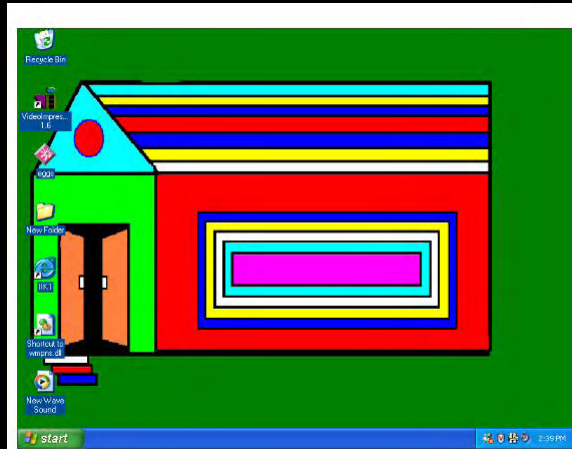
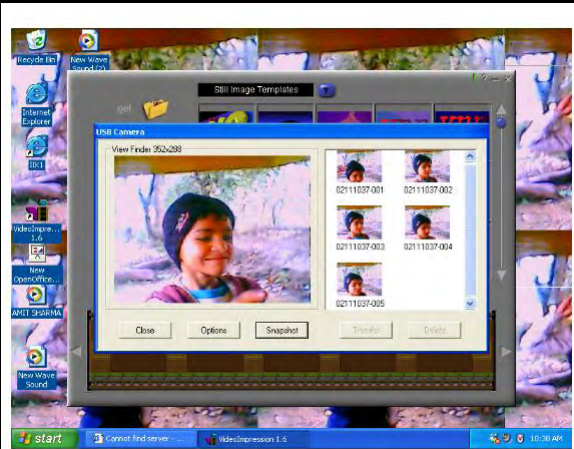
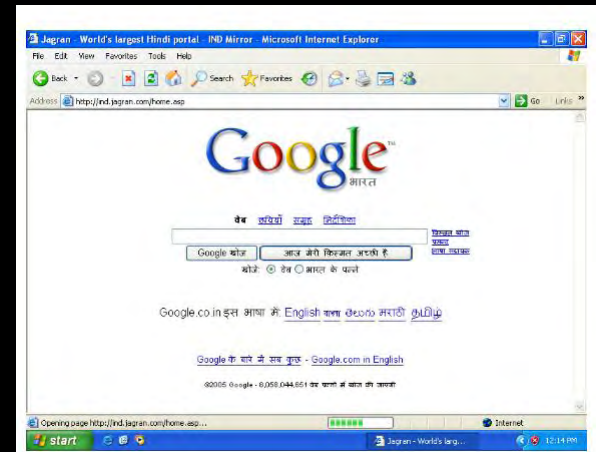
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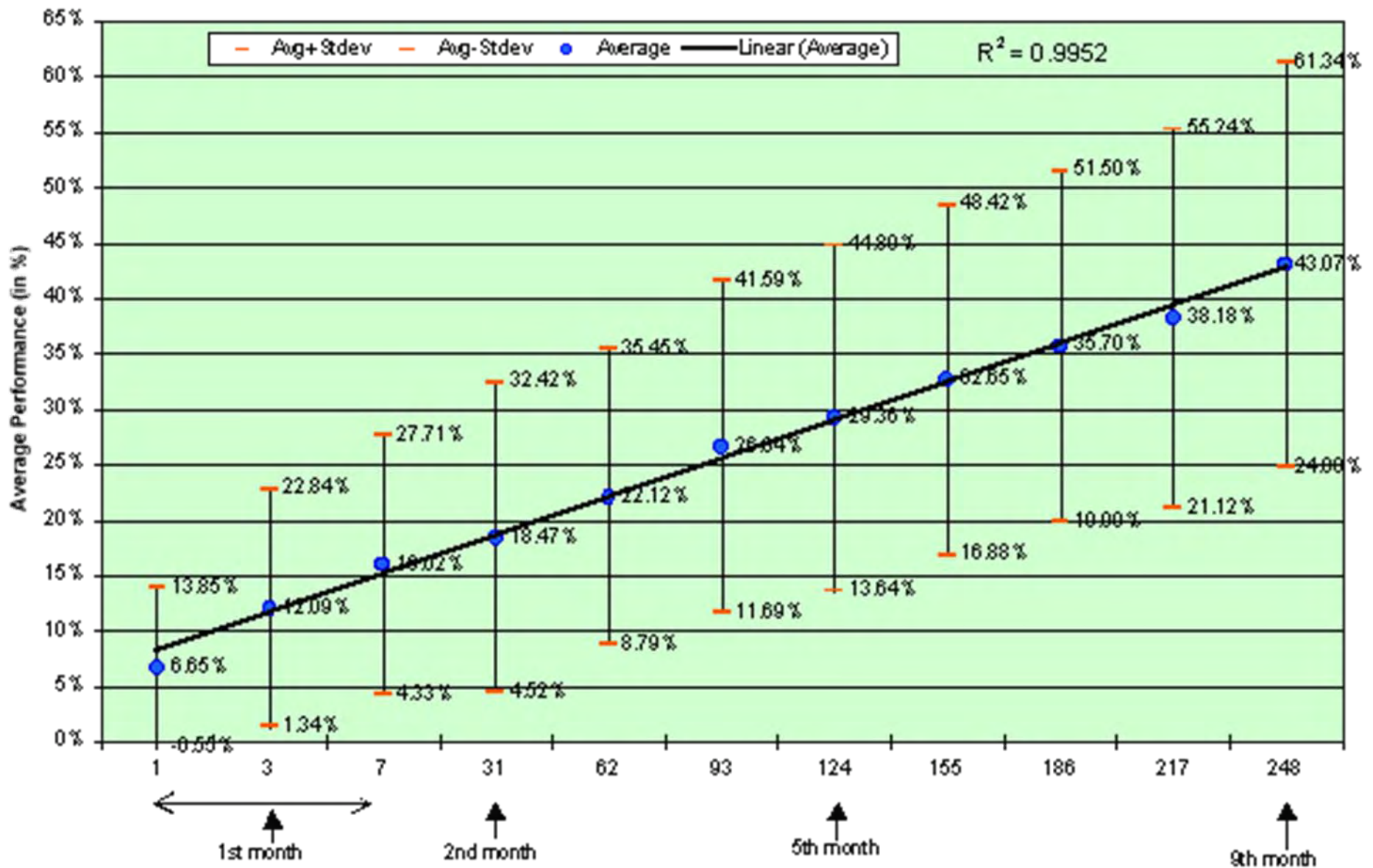
Screen Shots



Cam Shots



National performance



Icon test results over a 9 month period with standard deviations

**Groups of children
can teach themselves
to use computers and the Internet,
irrespective of
who or where they are....**

**What else
can they learn
by themselves?**

A photograph of two young girls. The girl on the left has dark, wavy hair and is wearing a white shirt, looking over her shoulder. The girl on the right has dark hair with a small orange flower clip and is wearing a denim top, looking directly at the camera. They are standing in front of a yellow wall. On the wall is a small television showing a blue screen with some graphics, and a small square hole. The text '2002- 2005' is in the top right corner, and the title 'Lessons from The Hole In The Wall' is at the bottom.

2002- 2005

Lessons from

The Hole In The Wall

The Hyderabad Experiment, 2002





**Groups of children
can achieve educational objectives
by themselves....**

How far can it go?

**Can Tamil speaking children
in an Indian village
learn the biotechnology
of DNA replication
in English
by themselves?**

How Prions Replicate SLIDE 7 OF 13

Unlike other infectious agents, prions do not contain genetic material. However, once they infect an individual, prions can replicate. How is this possible?



Strep Bacteria
DNA



HIV Virus
RNA



Prion
no DNA or RNA

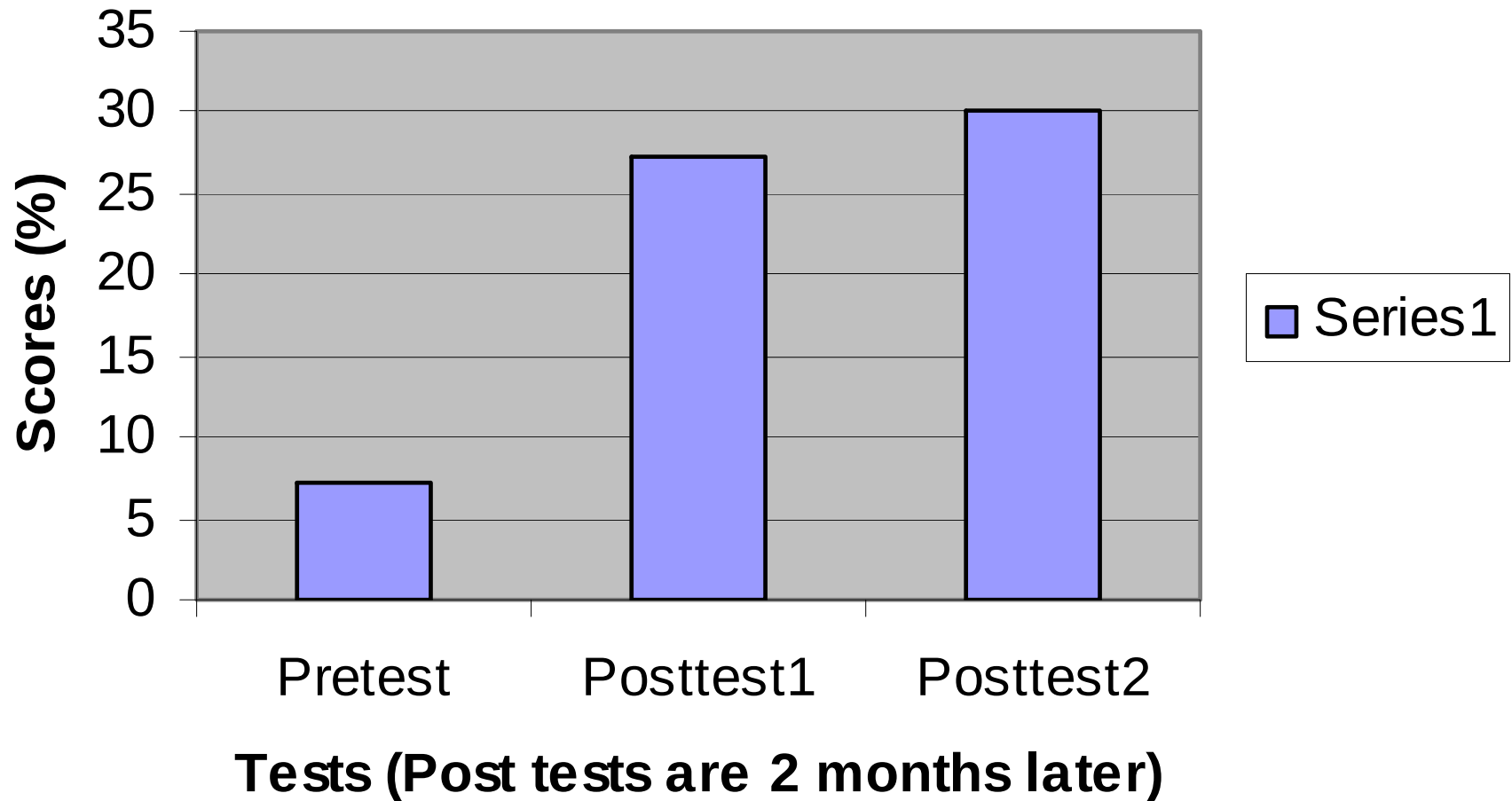
BACK

FORWARD

The Kalikuppam Experiment, 2007

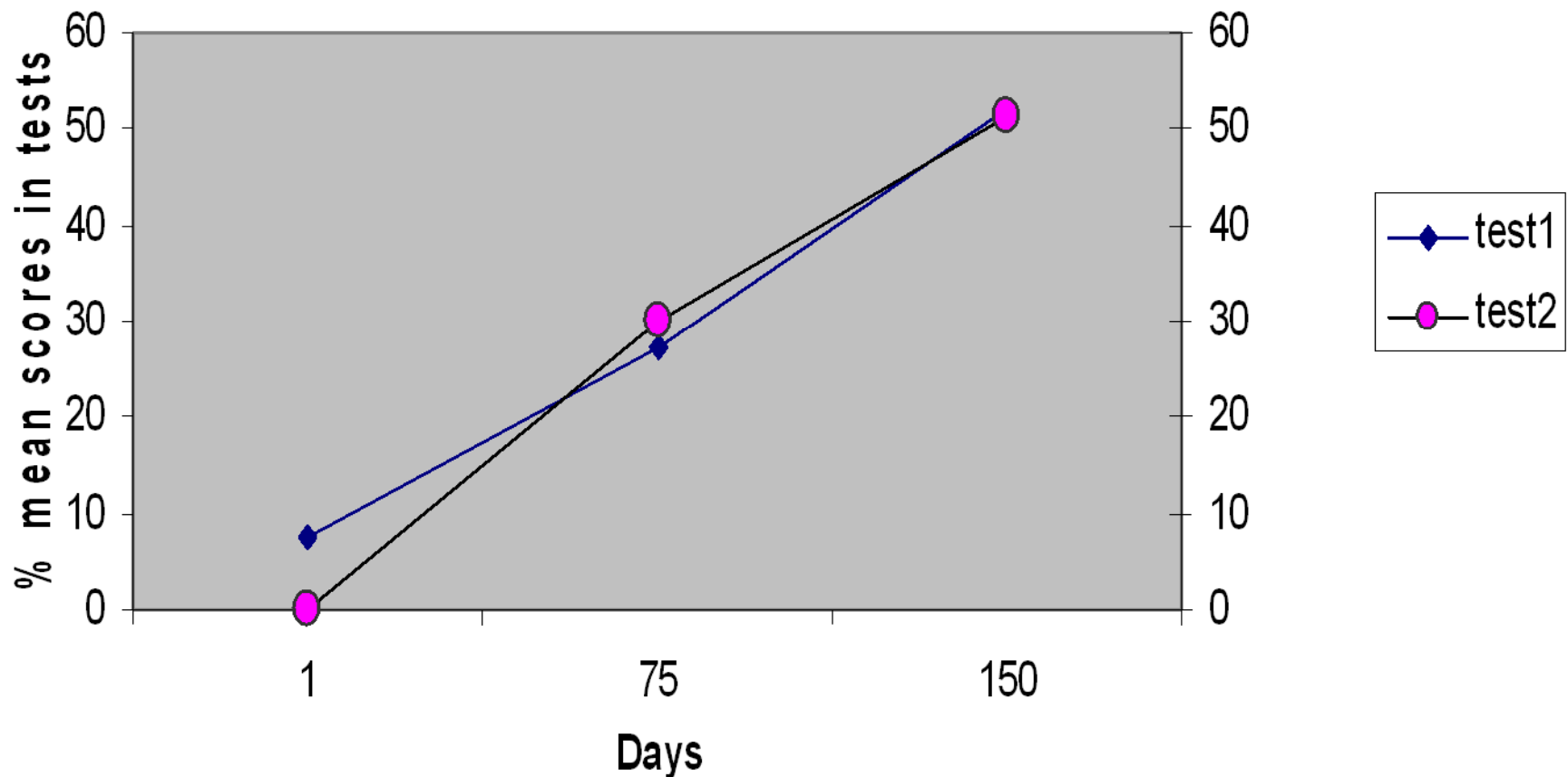
On their own

Children's scores in biotechnology tests



With a friendly, but not knowledgeable, mediator

Test scores for Kalikuppam primary sample



No instruction between day 1-75, mediated between day 75-150

**Groups of children
in the presence of
a friendly,
but not necessarily knowledgeable,
mediator
can learn
(almost?) anything by themselves....**

2006 - 2010

Beyond

The Hole In The Wall



The Granny Cloud

By themselves.....

- **Children**
- **Groups**
- **The Internet**
- **The Granny Cloud**
- **BIG questions**



Hong Kong, China, 2011

How does an iPad know where it is?

Montevideo, Uruguay, 2011



Can trees think?

Santiago, Chile, 2011

Where did language come from?

Turin, Italy, 2010

What did Pythagoras find?

Washington, USA, 2011

Why does red go with black?

Gateshead, England, 2010



What are fractals?

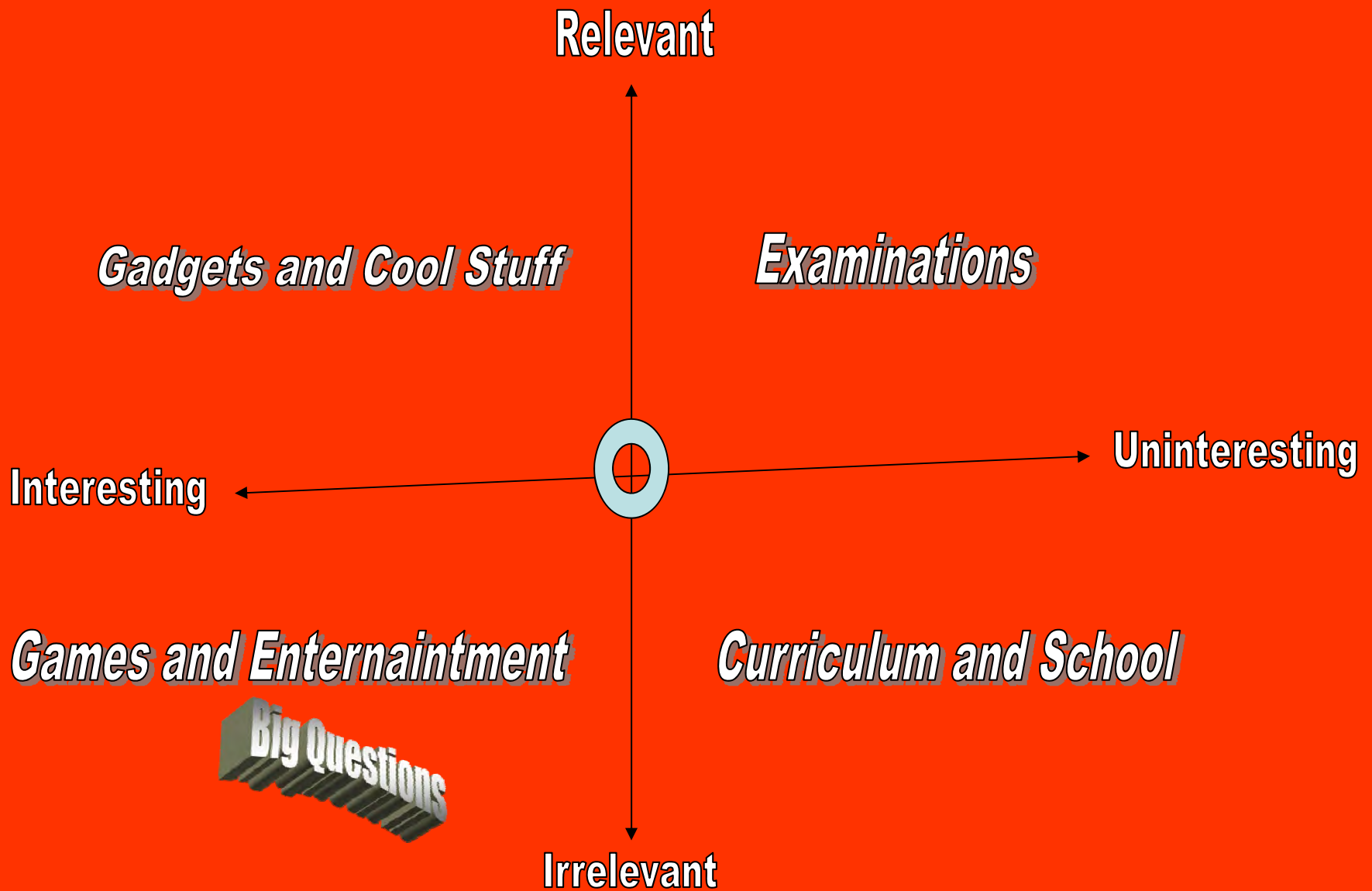
New Delhi, India, 2010



What are household robots?

A New Primary Curriculum

- Reading comprehension**
- Information search and analysis**
- A rational system of belief**



Speculation

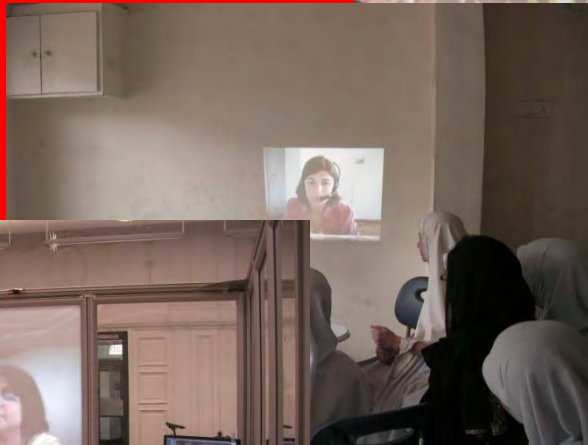
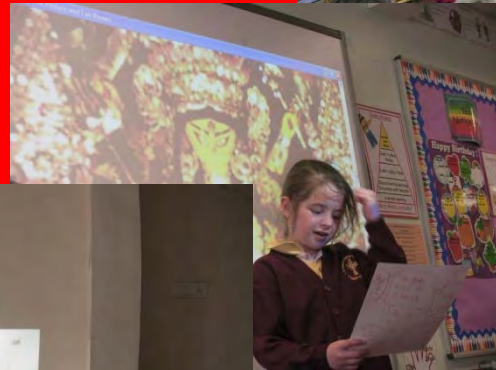
EDUCATION

is a self organising system, with

LEARNING

as its emergent phenomenon....

The Future of Learning



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