



RESEARCH AND OBSERVATIONS

We visited schools in Chembur, Mumbai and interacted with a lot of students and teachers. We looked around their classrooms and found a lot of drawings stuck on to the walls, some were diagrams, others were paintings. We also attended computer programming classes and recorded our observations.
School: Saraswati Vidya Mandir, Chembur, Class 8th

- Children are not able to make connections.
- Children lack the ability to structure information.
- There is little or no learning / understanding of Spaces and visualizing things in the 3 Dimensional perspective.
- Children look forward for festivals, working together during festivals.

The above findings were based on the drawings I had asked the students to make in a time of 15 minutes. This technique is called metaphor elicitation technique and is one of the most modern techniques to research where the users are given a task based on a question and they have to answer using tools like drawing, selecting photographs or songs etc.

The Questions I asked were :-

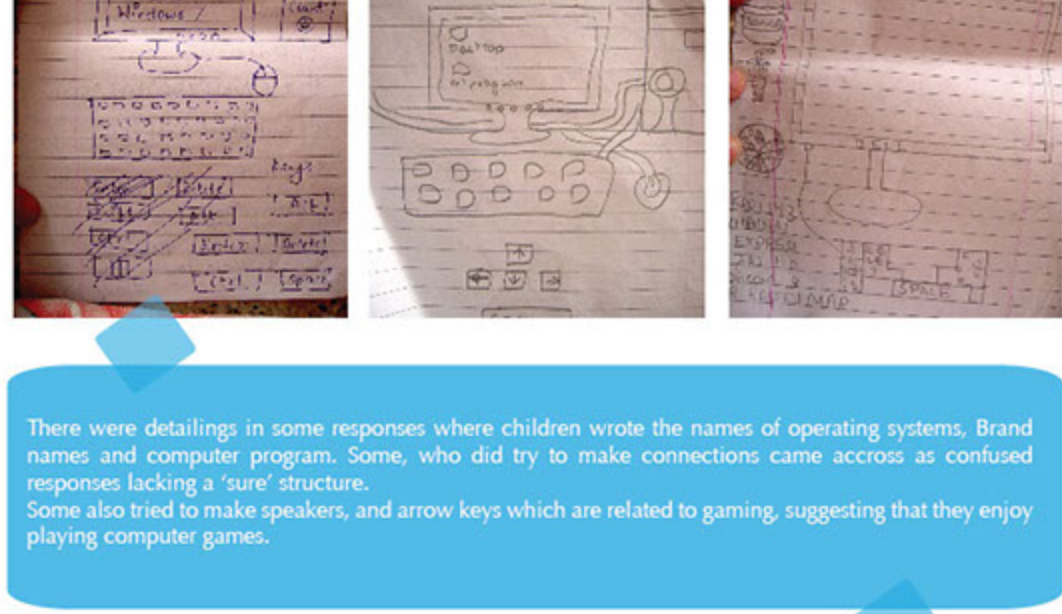
- Draw the computer that you work on in the Computer lab.
- Draw 5 of your favorite Keys on the Keyboard.
- Draw a dish you like eating the most.
- Name 5 of your favorite films and 2 of your favorite songs.

44 students

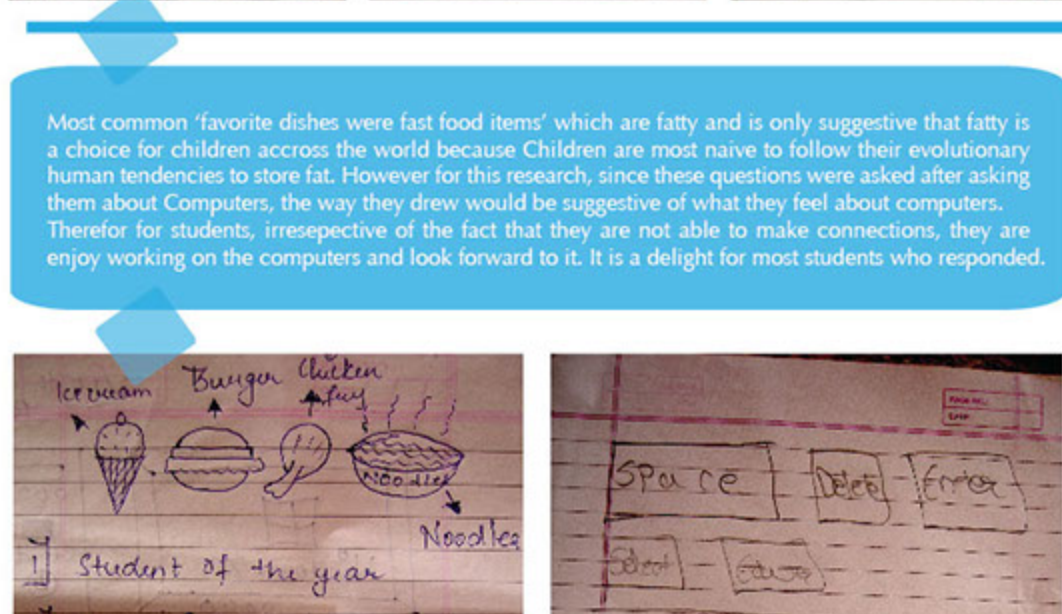


DRAWINGS FROM CHILDREN

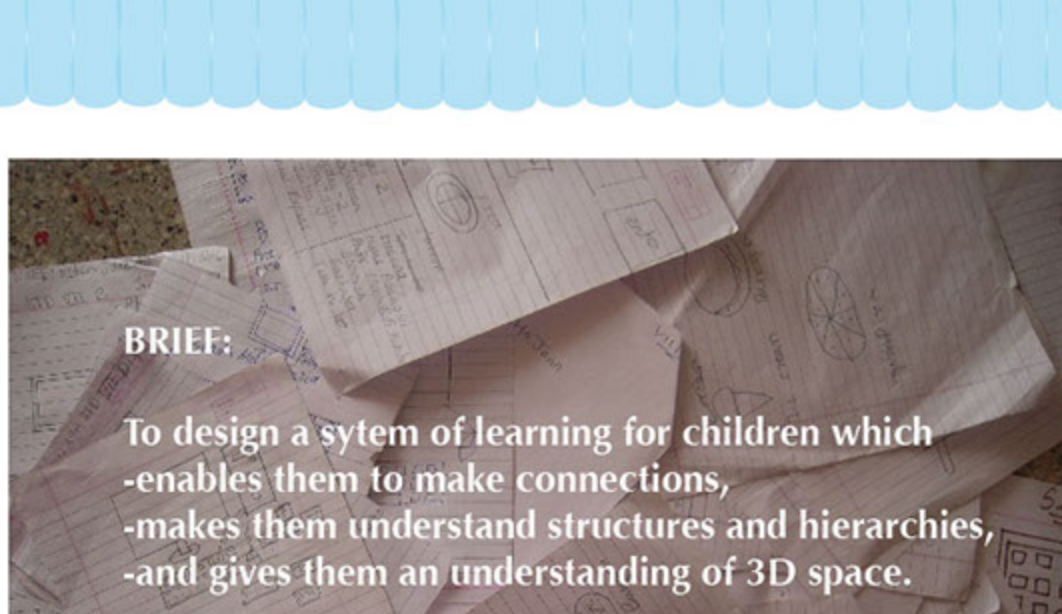
Most Children could not draw the connections between different parts of the computer. The mouse for example was connected to the Monitor, or freely existing. There was no CPU in many cases. This suggests that their understanding of Computer is only the idea of the monitor, keyboard and the mouse and they do not know how they are related.



There were detailings in some responses where children wrote the names of operating systems, Brand names and computer program. Some, who did try to make connections came across as confused responses lacking a 'sure' structure. Some also tried to make speakers, and arrow keys which are related to gaming, suggesting that they enjoy playing computer games.



Most common 'favorite dishes were fast food items' which are fatty and is only suggestive that fatty is a choice for children across the world because Children are most naive to follow their evolutionary human tendencies to store fat. However for this research, since these questions were asked after asking them about Computers, the way they drew would be suggestive of what they feel about computers. Therefor for Students, irrespective of the fact that they are not able to make connections, they are enjoy working on the computers and look forward to it. It is a delight for most students who responded.



BRIEF:
To design a sytem of learning for children which -enables them to make connections, -makes them understand structures and hierarchies, -and gives them an understanding of 3D space. using waste material that is around them.

SYSTEM DESIGN

Is there a system which already exists in the market?



Yes, LEGO and other building blocks solve the same problem, but are not affordable for all children. Also they are not flexible enough and are commercial in the sense that they lack iterations and have less permutation and combinations so one has to purchase all possible sets. There is no room for individual explorations. But LEGO is truly an inspiration.

What are we using to build such a system?



Our final endeavour was to make 'LEGO' like for children using plastic bottles. Bottles are present across all strata of society, however we found that children who belong to the slum, and especially ragpickers, have these available in plenty. So we started working on what all we can build out of waste bottles which could become building blocks.

We made joineries, Blocks and a lot more.



My Group members were Anurag, Karishma and Renuka, Post Graduate students from Welingkar institute of management.



Why Only Bottles?

No, the idea is not to use bottles only. Bottles is the Beginning. We would like children to explore materials on their own. This came out of post rationalization of our Project. Bottles would be cues for children to start exploring. We don't want to force Learning. We want it to be creative and self exploratory.

How do we motivate children to play with it?

We decided that we would dissipate this knowledge and system by means of a festival that we called KUDOS. An annual festival for children from 5th to 8th standard in which children participate and showcase their work made out of waste.

- Step 1** Conduct Workshops in schools and areas where KUDOS is to be organized.
- Step 2** Encourage by means of newer materials all available around them.
- Step 3** Celebrate KUDOS.

NOMENCLATURE AND BRANDING

Bottle Caps making connections between letters



Kudos means Glory in English
Kuda means waste in some Indian Languages



We would like to thank our mentors Ted Moallem, Jie Qi, and Mydhili Bayyapunedi for guiding us through this journey. Our Project was much appreciated for the fact that it was simple and did not involve any expensive technology. We are working on making tools now which make the construction of these blocks easier. In the Picture is the space set up for children to come and celebrate KUDOS

COLLECT
COLLATE
CREATE
CELEBRATE



Design for Creative Learning
Anurag | Karishma | Renuka | Shashank