



Tangible User Interfaces in CSCL

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What are Tangibles/TUIs?

couple physical representation
with digital representations

=> interactive systems

with “integration of representation”



Why used for CSCWL?

- interaction very natural
- perception and cognition closely interlinked
- size
- slow pace of interaction



Classifications

1. TUI models...

...real-world structures (Froebel-inspired Manipulatives (FiMs))

...abstract structures (Montessori-inspired Manipulatives (MiMs))

2. Learning activity is...

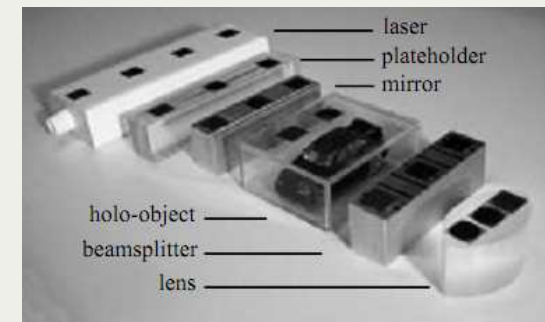
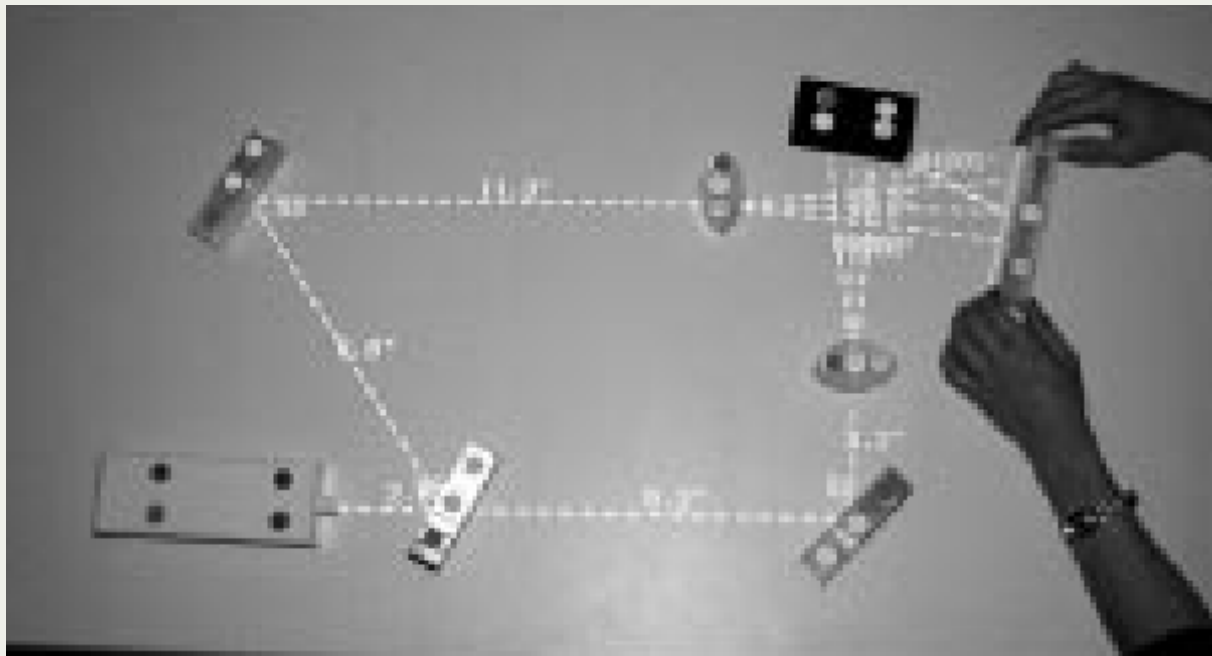
...exploratory

...expressive

Magic Carpet ^[1]

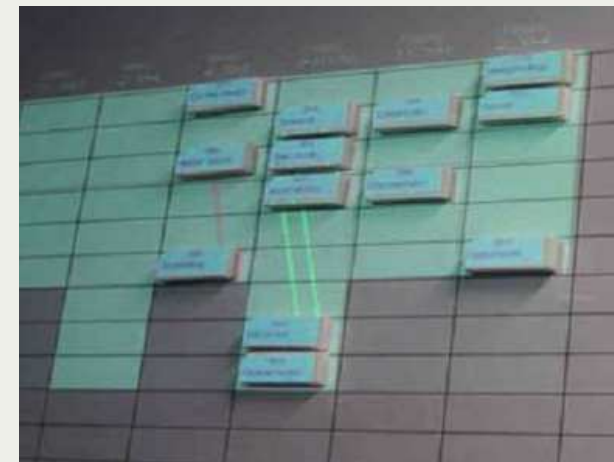
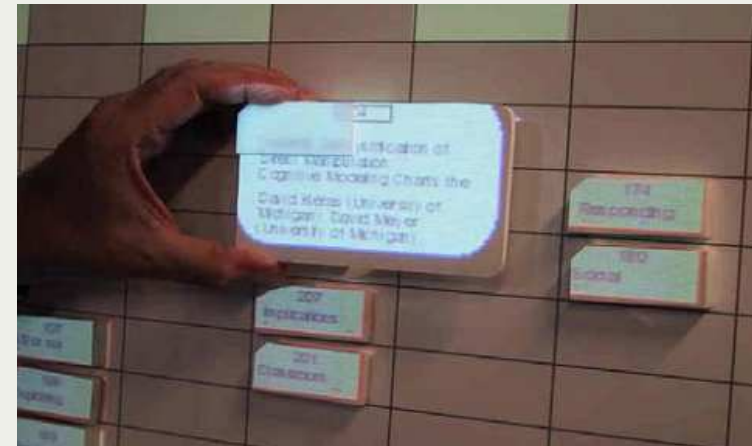
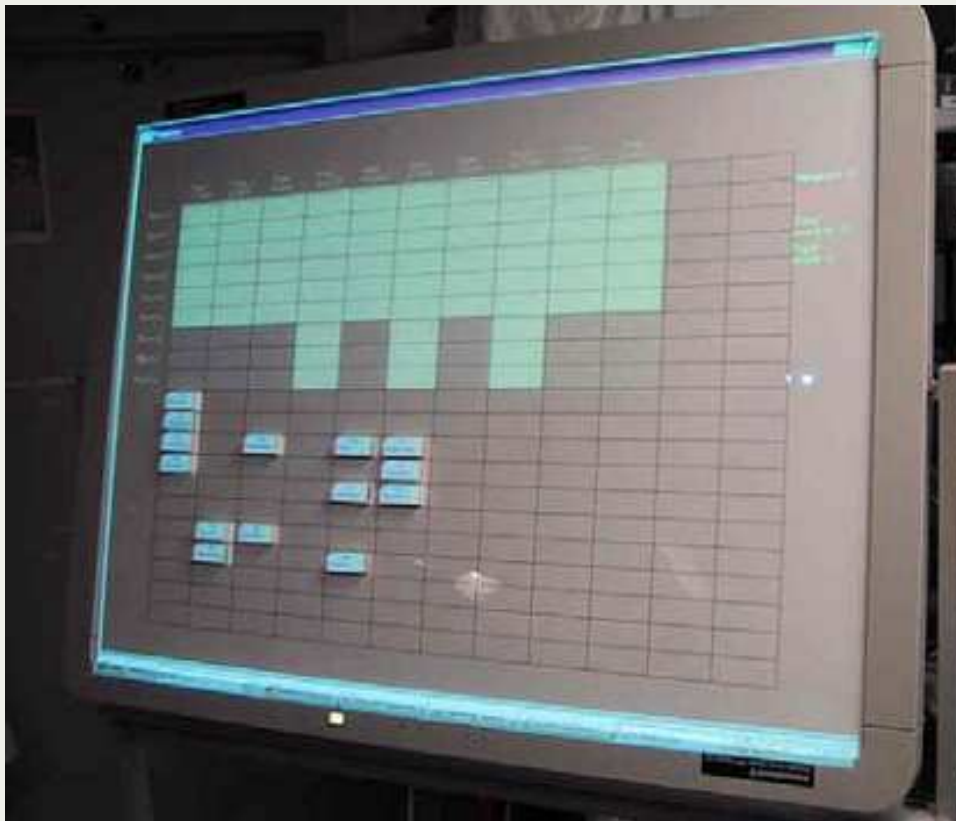


Illuminating Light [2]





Senseboard [3]





Thanks a lot for your attention!

- [1] D. Stanton, V. Bayon, H. Neale, A. Ghali, S. Benford, S. Cobb, R. Ingram, C. O'Malley, J. Wilson and T. Pridmore. Classroom Collaboration in the Design of Tangible Interfaces for Storytelling. In *Proceedings of the SIGCHI conference on Human factors in computing systems*, pages 482 - 489, New York, NY, USA, 2001, ACM Press
- [2] J. Underkoffler und H. Ishii. Illuminating Light: An Optical Design Tool with a Luminous-Tangible Interface. In *Proceedings of the SIGCHI conference on Human factors in computing systems*. New York, NY, USA, 1998, ACM Press/Addison-Wesley Publishing Co
- [3] R. Jacob, H. Ishii, G. Pangaro and J. Patten. A Tangible Interface for Organizing Information Using a Grid. In *Proceedings of the SIGCHI conference on Human factors in computing systems*. New York, NY, USA, 2002, ACM Press