Literature Review: Benford et al, 2000

Title: Designing Storytelling Technologies to Encourage Collaboration Between Young Children
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Year: 2000
Abstract: We describe the iterative design of two collaborative storytelling technologies for young children, KidPad and the Klump. We focus on the idea of designing interfaces to subtly encourage collaboration so that children are invited to discover the added benefits of working together. This idea has been motivated by our experiences of using early versions of our technologies in schools in Sweden and the UK. We compare the approach of encouraging collaboration with other approaches to synchronizing shared interfaces. We describe how we have revised the technologies to encourage collaboration and to reflect design suggestions made by the children themselves.

Background

Collaboration is an important skill for young children to learn.

Working in pairs or small groups can have beneficial effects on learning and development, particularly in the early years [4, 5, 6].

Technology can support and facilitate collaborative learning, and the computer can provide a common frame of reference and can be used to support the development of ideas between children. [1, 3].

Today’s technology is designed to support either one individual at one computer, or one individual with another individual at a different computer.

However, much/most classroom computer use involves pairs or small groups of students sharing the same computer in “shoulder-to-shoulder collaboration.”

Significant change in children’s ability to collaborate takes place between 5 and 7 years old [7].

Informal observations found that youngest children (4–5) have difficulty collaborating and cannot work effectively together in groups greater than two.

Authors introduce a design that encourages without forcing collaboration. Allows children to discover positive aspects of working together.

Enabling vs. Encouraging vs. Forcing [2].

“Cooperative Inquiry:” involving children as design partners in an iterative technology development process.

100 children in UK and Sweden involved in a year-long series of technology design sessions. Approx. 50 sessions about 1 a week.

Technologies
• KidPad
• The Klump (3-D clay modelling tool)
• MID: http://www.cs.umd.edu/hcil/mid (enables multiple input devices for Java)

WYSIWIS and Relaxed WYSIWIS: What you see is what I see. Technology relies on object locking and turn taking protocols.

Collaborative tools added to KidPad and The Klump:

• Crayon color blending (KidPad) and color combos (The Klump)
• Arrows: squash and stretch
• Erasers: clear all
• Hand: zoom in / zoom out
• Combining textures in The Klump
• Stretching multiple vertices at once in The Klump

Initial experiments show children had to be told about the collaborative tools b/c interface didn’t highlight them. Future efforts to be directed at making collaborative tools more obvious.

References