Geney: Exploring a Collaborative Interaction Paradigm for Small Screen Displays

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This work investigates a new interaction paradigm for handheld computing: the use of multiple interconnected handheld devices to form a virtual shared workspace. Given the importance of rich, social interactions of children, we wanted to explore ways to effectively support children's collaboration on handheld computers.

We built our collaborative system on top of Geney [1], an educational software research project at Simon Fraser University. Geney is a Palm OS application for teaching middle school students about genetics; kids try to produce fish with specific traits by "marrying" fish. We began with paper prototypes, performing participatory design with two groups of seventh graders that had previously played Geney. With the kids, we designed and implemented a multiple Palm application where information about particular fish is shared among peers via infrared, trait percentages of possible outcomes are displayed on the screens, and the groups are free to discuss the possibilities and trade fish.

The system facilitates children's synthesis of information and discussion during the collaborative activity. We then conducted an exploratory study of the new interaction paradigm with seven 7th grade participants, observing children's use of this new interaction paradigm, and gaining feedback on the WHAT-IF feature. The results of this work illustrate the potential of handheld computers for supporting children's social interactions in collaborative learning activities.

More information is available through the Group for User Interface Research website at *http://guir.berkeley.edu/geney.*

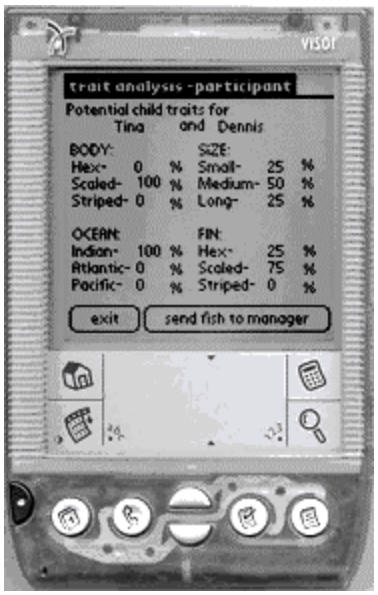

Figure 1: What-if analysis

[1]
A. Danesh, K. M. Inkpen, F. Lau, K. Shu, and K. S. Booth, "GeneyTM: Designing a Collaborative Activity for the PalmTM Handheld Computer," *CHI,* Seattle, WA, April 2001 (submitted).

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