InstructiBlocks: Exploring Creativity with Ambiguous Physical-Digital Models

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Designing Interfaces for Creativity Symposium
Interactive Demo

Abstract
InstructiBlocks, developed within the PhysiCAD project (www.physicad.com), is a digitally augmented construction kit, designed to explore the possibilities of ambiguous physical-digital models. Each block, containing a unique radio-frequency identification tag, has a simple text instruction associated with it (e.g. ‘blue blocks are wings’ or ‘rocket engine’). These digital instructions are accessible by passing the block over a reader, which displays the instructions associated with a particular brick on screen. With this system we aim to investigate the relationship between ambiguity of instructions and design freedom and how this impacts on creativity in particular in avoiding the problem of design fixation through the support of divergent design thinking.

As a tool for creativity, the system is both very simple and very open for reinterpretation. In order to reprogram a block, it is simply placed on the block reader and a new instruction is typed in. This allows the system to be used to both reconstruct a model from the contained digital instructions and as a way of encoding new digital models. An early exploratory study has looked at how a small set of instructions can ambiguously encode the design of a space ship. This small instruction set can be used to generate a wide range of models within the design space whilst maintaining a recognisable similarity and satisfying the underlying rules embodied in the instructions. In relation to the symposium’s themes, InstructiBlocks aims to provoke debate about simplicity in tools for creativity whilst raising questions about levels of fidelity in physical-digital model construction.

Instructiblocks encoded with an ambiguous spaceship instruction set produce a variety of ships when interpreted by different people.